### 986TD Evolution® Two-Stage, Variable Speed, 4-Way Multipoise, Condensing Gas Furnace



## **Product Data**

A11264



Representative drawing only. Some product models may vary.

# WARNING

# CARBON MONOXIDE POISONING AND FIRE HAZARD

Failure to follow this warning could result in personal injury, death, and/or property damage.

This furnace is not designed for use in recreation vehicles, manufactured (mobile) homes or outdoors.

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The 986TB Multipoise Variable-Speed Condensing Gas Furnace features the two-stage Evolution® System. The Perfect Heat Technology<sup>®</sup> two-stage gas system is at the heart of the comfort provided by this furnace, along with the Evolution variable-speed constant airflow ECM blower motor, and two-speed inducer motor. With an Annual Fuel Utilization Efficiency (AFUE) of up to 96.7%, the Evolution two-stage gas furnace provides exceptional savings when compared to a standard furnace. This Evolution Gas Furnace also features 4-way multipoise installation flexibility, and is available in six model sizes. The 986TC can be vented for direct vent/two-pipe, ventilated combustion air, or single--pipe applications. A Bryant Connex<sup>™</sup> and Evolution Air Conditioner or Heat Pump can be used to form a complete Evolution System. All sizes can be installed in air quality management districts with a 40 ng/J NOx emissions requirement. All sizes are design certified in Canada.



#### PERFORMANCE

- Communicating variable-speed, constant airflow (VCA) ECM blower motor for electrically efficient operation all year long in heating, cooling and continuous fan operation
- Two-speed inducer motor, and two-stage gas valve.
- PerfectLight<sup>TM</sup> Silicon Nitride Hot Surface Igniter.
- Perfect Humidity® technology for unmatched dehumidification performance.
- Integral part of the Perfect Humidity® System Technology.
- Fan On Plus<sup>™</sup> technology allows control of continuous fan speed from a compatible thermostat.
- SmartEvap<sup>™</sup> technology helps control humidity levels in the home when used with a compatible humidity control system.
- On-board NFC antenna makes setup a tap away when using the Bryant Service Technician App.
- 3 Digit Display shows fault codes and furnace status.
- RAT and SAT thermistors can provide temperature rise.
- Aluminized-steel primary heat exchanger.
- · Stainless-steel condensing secondary heat exchanger.
- Fully-insulated casing including blower section.

#### INSTALLATION FLEXIBILITY

- 4-way multipoise design for upflow, downflow or horizontal installation, with unique vent elbow and optional through- the-cabinet downflow venting capability.
- Ideal height 35-in. (889 mm) cabinet: short enough for taller coils, but still allows enough room for service.
- Direct-vent/sealed combustion, single-pipe venting or ventilated combustion air.

#### APPLICATIONS

- Self-diagnostics and extended diagnostic data through the Advanced Product Monitor (APM) accessory or Evolution Connex<sup>™</sup> Interface.
- · Propane convertible with gas conversion accessory
- Convenient Air Purifier and Humidifier connections.
- Compatible with single- and multiple-zone Evolution systems.

#### CERTIFICATIONS

- All sizes meet ENERGY STAR® Version 4.1 criteria for gas furnaces: 95%+ AFUE.
- Cabinet air leakage less than 2.0% at 1.0 in. w.c. and cabinet air leakage less than 1.4% at 0.5 in. w.c. when tested in accordance with ASHRAE standard 193.

A210059

#### **DIMENSIONAL DRAWING**



NOTE: ALL DIMENSIONS IN INCH (MM)

A210796

		Dir	nensions		
	A	В	С	D	SHIP WT.
FURNACE SIZE	CABINET WIDTH	OUTLET WIDTH	BOTTOM INLET WIDTH	AIR INTAKE	LB (KG)
30040C14	14-3/162 (361)	12-1/2 (319)	12-9/16 (322)	7-1/8 (181)	125 (56.7)
42060C17	17-1/2 (445)	15-7/8 (403)	16 (406)	8-3/4 (222)	143 (64.6)
42080C17	17-1/2 (445)	15-7/8 (403)	16 (406)	8-3/4 (222)	145 (65.5)
60080C21	21 (533)	19-3/8 (492)	19-1/2 (495)	10-1/2 (267)	157 (71.0)
66100C21	21 (533)	19-3/8 (492)	19-1/2 (495)	10-1/2 (267)	167 (75.7)
66120C24	24-1/2 (622)	22-7/8 (581)	23 (584)	12-1/4 (311)	188 (85.0)

#### MODEL NUMBER NOMENCLATURE

1 Heat Exchanger 9	2 Tier/NOx 8	3 AFUE/NOx 6	4 Heating Stages T	5 Major Series D	6, 7 Cooling Capacity (CFM) 42	8 - 10 Heat Input 060	11 Motor Type C	12 - 13 Width 17	14 Voltage (1-phase) A	15 Un-used -	16 Minor Series A
8 = 80% 9 = 90+%	0 = Base 1 = Legacy Line 2 = Preferred 3 = Ultra Low Nox 8 = Evolution	0 = 80% 1 = 80% Low NOx (Not Ultra Low NOx) 2 = 92% 5 = 95% 6 = 96% 7 = 97% 8 = 98%	M = Modulating T = Two Stage S = Single Stage C = Single Stage Communicating	A B C D	24 = 800 CFM 30 = 1000 CFM 36 = 1200 CFM 42 = 1400 CFM 48 = 1600 CFM 60 = 2000 CFM 66 = 2200 CFM	026 = 26,000 BTU/h 040 = 40,000 BTU/h 060 = 60,000 BTU/h 	C = Constant Airflow Variable-Speed (VCA) ECM V = Variable-Speed (VCT) PWM M = Multi 18-Speed Constant Torque (MCT) ECM	14 = 14.2" 17 = 17.5" 21 = 21.0" 24 = 24.5"	A = 110V/60Hz B = 230V/50Hz		A B C 

For California Residents:

For installation in SCAQMD only: This furnace does not meet the SCAQMD Rule 1111 14 ng/J NOx emission limit, and thus is subject to a mitigation fee of up to \$450. This furnace is not eligible for the Clean Air Furnace Rebate Program: www.CleanAirFurnaceRebate.com

#### FURNACE COMPONENTS



#### MINIMUM CLEARANCES TO COMBUSTIBLE MATERIALS

POSITION	CLEARANCE
Rear	0 (0 mm)
Front (Combustion air openings in	1 in (25 mm)
furnace and in structure)	1 111. (25 11111)
Required for service <sup>*</sup>	24 in. (610 mm) <sup>†</sup>
All Sides of Supply Plenum <sup>*</sup>	1 in. (25 mm)
Sides	0 (0 mm)
Vent	0 (0 mm)
Top of Furnace	1 in. (25 mm)

\*. Consult your local buildin codes

Recommended

The furnace should be sized to provide 100 percent of the design heating load requirement plus any margin that occurs because of furnace model size capacity increments. None of the furnace model sizes can be used if the heating load is 20,000 BTU or lower. Use Air Conditioning Contractors of America (Manual J and S); American Society of Heating, Refrigerating, and Air-Conditioning Engineers; or other approved engineering method to calculate heating load estimates and select the furnace. Excessive oversizing of the furnace may cause the furnace and/or vent to fail prematurely, customer discomfort and/or vent freezing.

Failure to follow these guidelines is considered faulty installation and/or misapplication of the furnace; and resulting failure, damage, or repairs may impact warranty coverage.

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#### SPECIFICATIONS

		UNIT SIZE	36040C14	42060C17	42080C17	60080C21	66100C21	66120C24
HEATING AND CAPACIT	Y AND EFFICIENC	Y		I	I	1	I	
	High Heat	(BTUH)	40,000	60,000	80,000	80,000	100,000	120,000
	Low Heat	(BTUH)	26,000	39,000	52,000	52,000	65,000	78,000
OUTPUT CAPACITY	High Heat	(BTUH)	39,000	59,000	78,000	78,000	98,000	117,000
(BTUH) <sup>†</sup>	Low Heat	(BTUH)	25,000	38,000	51,000	51,000	54,000	76,000
		High Heat	40 - 70	35 - 65	40 - 70	40 - 70	45 - 75	45 - 75
CERTIFIED TEMPERATU	JRE RISE	Tight float	(22 - 39)	(19 - 36)	(22 - 39)	(22 - 39)	(25 - 42)	(25 - 42)
RANGE - °F (°C)		Low Heat	30 - 60 (17 - 3)					
t		Upflow/Horizontal	96	96.3	96.2	96.7	96.1	96.7
AFUE		Downflow	95	95	95	95	95	95
AIRFLOW CAPACITY AN	ID BLOWER DATA							
Pated Cortified External	Static Prossure	Heating	0.1	0.12	0.15	0.15	0.2	0.2
Rateu Gertineu External	Static Flessure	Cooling	0.5	0.5	0.5	0.5	0.5	0.5
		High Heat	580	1045	1215	1250	1475	1880
Airflow CFM @ Rated ES	SP (CFM) <sup>‡</sup>	Low Heat	465	758	955	970	1280	1495
		Cooling	995	1270	1350	1985	2165	2190
Cooling Capacity (tons)		400 CFM/ton	2.5	3	3.5	4.5	5	5.5
		350 CFM/ton	3	3.5	4	5.5	6	6
Direct Drive Motor Type				Electro	onically Comm	nutated Motor	(ECM)	
Direct Drive Motor HP			1/2	1/2	1/2	1	1	1
Motor Full Load Amps			6.3	6.7	6.3	11.5	11.5	11.0
RPM Range					300 -	1300		
Heating Blower Control	(Htg Off-Delay)			Adjustable:	90, 120 (facto	ory set), 150, 1	80 seconds	
<b>Cooling Blower Control</b>	(Time Delay Relay	()		Adjustabl	e: 90 (factory-	set), 5, 30, 60	) seconds	
Blower Wheel Diameter	x Width - In. (mm)	)	12 x 8	11 x 8	11 x 8	11 x 10	11 x 10	11 x 11
Air Filtration System					Field Sup	plied Filter		
Filter used for Certified	Watt Data				32553	81-40**		
ELECTRICAL DATA								
INPUT VOLTAGE		Unit Volts-Hertz-Phase			115-	60-1		
OPERATING VOLTAGE	RANGE	Min-Max		_	104	-127		1
MAXIMUM UNIT AMPS			7.1	7.3	7.1	13.1	13.2	11.9
			9.8	10	9.8	17.3	17.4	15.7
MAXIMUM WIRE LENGTH								
MEASURE 1 WAY IN FT		Feet	37	37	37	33	33	36
(M)		Meters	11.3	11.3	11.3	10.1	10.1	11
MINIMUM WIRE SIZE		AWG	14	14	14	12	12	12
MAX. FUSE/CKT BKR SI (TIME-DELAY TYPE REC	ZE COMMENDED)	Amps	15	15	15	20	20	20
TRANSFORMER CAPAC OUTPUT)	ITY (24 VAC				40	VA		
EXTERNAL CONTROL P	OWER	Heating			24	VA		
AVAILABLE		Cooling			35	VA		

#### **SPECIFICATIONS (Continued)**

	UNIT SIZE	36040C14	42060C17	42080C17	60080C21	66100C21	66120C24
GAS CONTROLS							
BURNERS		3	3	4	4	5	6
GAS CONNECTION SIZE				1/2in.	NPT		
GAS VALVE (REDUNDANT)	Mfr			WhiteRo	odgers™		
MIN. INLET PRESSURE	(in.w.c.)			4.5 (Natu	ural Gas)		
MAX. INLET PRESSURE	(in.w.c.)			13.6 (Nat	ural Gas)		
MANUFACTURED (MOBILE HOME KIT)				See Access	sory Listing		
IGNITION DEVICE				Silicon	Nitride		
FACTORY INSTALLED ORIFICE		44	44	44	44	44	44
CONNECTIONS							
Communication System			E	volution®; Eve	olution® Zonir	ng	
Thermostat Connections			R, W/W1	, W2, Y/Y2, Y	1, G Com 24	/, DHUM	
Accessory Connections		EAC-1 (115 V	/AC); HUM (24	4 VAC); 1-STO Y	AC (via Y/Y2 1)	2); 2-STG AC (	cia Y/Y2 and

\*. Gas input ratings are certified for elevations to 2000 ft. (610 M). In USA, For elevations above 2000 ft (610 M), reduce ratings 4 percent for each 1000 ft (305 M) above sea level. Refer to National Fuel Gas Code NFPA 54/ANSI Z223.1 Table F.4 or functe installation instructions.
†. Capacity in accordance with U.S. Government DOE test procedures.
‡. Airflow shown is for bottom only return-air supply for the as-shipped speed tap. For air delivery above 1800 CFM, see Air Delivery table for other options. A filter is required for each return-air supply. An airflow reduction of up to 7 percent may occur when using the factory-specified 4-5/16-in. (110 mm) wide, high efficiency media filter.
\*\*. See Accessory List for part numbers available.

### AIR DELIVERY - CFM (WITH FILTER)

					300	60C14							
Available Cooling Airflow	320	400	450	488	525	555	600	*650	700	740	800	<sup>†</sup> 875	925
Settings (CFM)	975	1000											
Available Constant Far	taca	400	150	100	5.95	555	600	650	700	740	200	075	0.25
Available Constant Fan	+320	400	450	400	929	000	000	000	700	740	000	075	920
AITTIOW Settings (CFM)	975			l ,									
Airflow reduces by 2% -	Ai	WOIT	ESP (ir	n. w.c.)									
3% per 0.1 of ESP above	1	000	0.	8									
the noted static for these													
airflow settings													
Max Cooling ESP	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1			
Max Cooling CFM	1045	1015	1005	990	995	1000	1000	1000	965	925			
					420	60C17							
Available Cooling Airflow	400	450	488	525	555	600	650	700	740	800	875	*925	975
Settings (CFM)	1000	1050	1138	1200	†1225	1300	1410						
Available Constant Fan	±400	450	/88	525	555	600	650	700	740	800	875	025	075
Airflow Settings (CEM)	1000	400	400	525	555	000	030	100	740	000	015	323	575
Annow Settings (Or M)	1000	-fl									-		
Airflow reduces by 2% -	All	200	23P (II	1. W.C.)									
3% per 0.1 of ESP above	1	200	0.	6									
the noted static for these		220	0.	0									
airflow settings		300	0.	4									
Man Castler 500		410	0.		0.5	0.0	07	0.0	0.0				
Max Cooling ESP	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1			
Max Cooling CFM	1405	1370	1335	1305	1270	1235	1200	1170	1135	1105			
					400	00047							
	400	450	400	505	420		050	700	710	000	075	*	075
Available Cooling Airflow	400	450	488	525	555	600	650	700	740	800	8/5	925	975
Settings (CFM)	1000	1050	1138	1200	<sup>†</sup> 1225	1300	1400						
Available Constant Fan	<sup>‡</sup> 400	450	488	525	555	600	650	700	740	800	875	925	975
Airflow Settings (CFM)	1000												
	Airflow	v Settina	ESP (ir	n. w.c.)									
Airflow reduces by 2% -	1	225	0.	7									
3% per 0.1 of ESP above	1	300	0.	5									
the noted static for these	1	400	0.	1									
airflow settings													
Max Cooling ESP	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1			
**Max Cooling CFM	1485	1455	1420	1390	1350	1315	1275	1230	1190	1150			
					600	80C21							
Available Cooling Airflow	650	700	740	800	875	925	975	1000	1050	1138	1200	1225	*1300
Settings (CFM)	1400	1480	1600	1625	<sup>†</sup> 1750	1850	1911	2000					
Available Constant Fan	1650	700	7/0	800	875	025	075	1000	1050	1138	1200	1225	1300
Airflow Sottings (CEM)	1400	100	740	000	515	323	315	1000	1000	1100	1200	1225	1000
Alliew Cettings (Cr W)	1400	flow	ECD /i-										
Airflow reduces by 2% -	All	000		n. w.c.)									
3% per 0.1 of ESP above	2	000	0.	J									
the noted static for these													
airflow settings													
Max Cooling ESP	0.1	0.2	03	0.4	0.5	0.6	0.7	0.8	0.0	1			
**Max Cooling CEM	2005	1005	1005	1005	1985	2005	2015	2025	2015	1975			
	2000	1990	1990	1990	1900	2000	2013	2020	2013	1913			
					661	00C21							
Available Cooling Airflow	650	700	740	800	875	925	975	1000	1050	1138	1200	1225	1300
Settings (CFM)	*1400	1480	1600	1625	1750	1850	1011	2000	2110				
	1400	700	740	1020	075	1000	075	1000	4050	1400	1000	1005	1000
Available Constant Fan	+650	700	/40	800	875	925	975	1000	1050	1138	1200	1225	1300
Airtiow Settings (CFM)	1400												
Airflow reduces by 2% -	Airflow	v Setting	ESP (ir	n. w.c.)									
3% per 0.1 of ESP above	1	911	0.	9									
the noted static for these	2	000	0.	.(									
airflow settings	2	110	0.	5									
					0 -								
Max Cooling ESP	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1			
		1 2105	2200	1 2195	2165	2125	2085	2040	1995	1950			
Max Cooling CFM	2190	2100	2200	2.00									

#### AIR DELIVERY - CFM (WITH FILTER) (CONTINUED)

					6612	20C24							
Available Cooling Airflow	650	700	740	800	875	925	975	1000	1050	1138	1200	1225	*1300
Settings (cfm)	1400	1480	1600	1625	†1750	1850	1911	2000	2110				
Available Constant Fan	<sup>‡</sup> 650	700	740	800	875	925	975	1000	1050	1138	1200	1225	1300
Airflow Settings (CFM)	1400												
Airflow reduces by 2%	Airflow	/ Setting	ESP (in	. W.C.)									
3% per 0.1 of ESP above	19	911	0.8	8									
the noted static for these	20	000	0.	7									
airflow settings	2	110	0.	5									
annon sounge													
Max Cooling ESP	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1			
**Max Cooling CFM	2220	2220	2235	2220	2190	2140	2085	2030	1975	1925			

\*. Low Cooling Default

†. High Cooling Default
‡. Constant Fan Default Not Recommended

Constant Fan Default Not Recommended
 \*\*. Max Cooling values are test CFM all other airflows are standard CFM

For Heating Settings

Eff1 airflow will give midpoint rise

Eff2 will increase heating airflow (when unit is capable)

Com2 will decrease heating airflow (defaults)

Com1 will give the lowest heating airflow

#### **TYPICAL WIRING SCHEMATIC**



Notes:

ESP is External Static Pressure Airflow values up to 1 in. w.c. ESP (unless noted)

#### FURNACE CONTROL BOARD



A230451

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#### MAXIMUM ALLOWABLE EXPOSED VENT LENGTHS INSULATION TABLE

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   |
| Winter<br>Design  | Unit<br>Size<br>Pipe<br>Dia. mm   | Unii<br>38  | Maxin<br>nsulat<br>51   | ed<br>64   | Allow<br>40,00<br>3/<br>Insi<br>38  
  | able<br>00* B<br>/8-in.<br>ulatio<br>51   | Expe<br>TUH<br>on<br>64  | osed<br>In<br>38  
  | Ven<br>1/2-ir<br>sulat<br>51   | t Lengt<br>n.<br>ion<br>64  | th in U  | nco<br>Jnin<br>51  | ondit<br>sulate   
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  | able       00* B       /8-in.       ulation       51       15.2       7.6       4.6       3.0   | e Exp<br>TUH<br>0n<br>64<br>13.7<br>6.1<br>3.0<br>1.5  | <b>In:</b><br>38<br>6.1<br>6.1<br>6.1<br>4.6  
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  | able       00* B       /8-in.       ulation       51       52       7.6       4.6       3.0   | e Exp<br>TUH<br>64<br>13.7<br>6.1<br>3.0<br>1.5<br>ated  | <b>In</b><br>38<br>6.1<br>6.1<br>6.1<br>4.6   
  | Ven<br>1/2-ir<br>sulat<br>51<br>18.3<br>9.1<br>6.1<br>4.6  | t Lengt<br>ion<br>64<br>15.2<br>7.6<br>4.6<br>3.0   | th in U<br>38<br>6.1<br>4.6<br>3.0<br>1.5<br>8<br>3/8  | 9.1<br>9.1<br>4.6<br>1.5   | 00 BTU  
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| Winter<br>Design<br>Temp °C<br>Winter   | Unit<br>Size<br>Pipe<br>Dia. mm<br>-7<br>-18<br>-29<br>-40<br>Unit Si<br>Pipe Dia.  | Unii<br>38<br>6.1<br>3.0<br>1.5<br>ze<br>mm   | Maxin nsulat 51 6.1 1.5 38  | ed<br>64<br>1.5<br>6<br>2<br>5   | Allow<br>40,00<br>3/<br>1nst<br>38<br>6.1 1<br>6.1 1<br>6.1 1<br>6.1 1<br>6.1 1<br>1<br>6.1 1<br>1<br>1<br>1<br>1   
  | able       00* B       /8-in.       /8 | e Exp<br>TUH<br>64<br>13.7<br>6.1<br>3.0<br>1.5<br>ated  | <b>1</b><br>38<br>6.1<br>6.1<br>4.6  | Ven<br>1/2-ir<br>sulat<br>51<br>18.3<br>9.1<br>6.1<br>4.6<br>102              
  | t Lengt<br>ion<br>64<br>15.2<br>7.6<br>4.6<br>3.0   | th in U<br>38<br>6.1<br>4.6<br>3.0<br>1.5<br>8<br>3/8<br>51  | <b>51</b><br>9.1<br>4.6<br>1.5   | 64<br>9.1<br>3.0<br>5<br>00 BTU<br>Insula<br>64  
  | 76<br>76<br>7.6<br>3.0<br>JH<br>ttion<br>76  | Space           3/8           6.1           6.1           6.1           6.1           6.1           6.1           6.1           6.1           6.1  | e - M<br>60,00<br>-in. In<br>51<br>22.9<br>12.2<br>7.6<br>4.6  | eter<br>0 BT<br>sula<br>64<br>19.8<br>9.1<br>6.1<br>4.6<br>38  | s<br>UH<br>tion<br>76<br>18<br>7.0<br>4.0<br>3.0<br>1/<br>51   | 6 :<br>.3 @<br>6 @<br>6 @<br>72-in  
   | 1/2·<br>38<br>3.1 2<br>3.1 7<br>3.1<br>3.1<br>3.1<br>3.1<br>3.1<br>5.1<br>64   | -in. lr<br>51<br>25.9<br>13.7<br>9.1<br>6.1<br>Ilatic  | <b>64</b><br>22.9<br>12.2<br>7.6<br>4.6   | ion<br>76<br>19.8<br>9.1<br>6.1<br>3.0<br>102   
  |
| Winter<br>Design<br>Temp °C<br>Winter<br>Design   | Unit<br>Size<br>Pipe<br>Dia. mm<br>-7<br>-18<br>-29<br>-40<br>Unit Si<br>Pipe Dia.<br>-7  | Unii<br>38<br>6.1<br>3.0<br>1.5<br>ze<br>mm   | Maxim<br>nsulat<br>51<br>6.1<br>1.5<br>38<br>38<br>4.6  | ed<br>64<br>1.5<br>6<br>5<br>5<br>12   | Allow<br>40,00<br>3/<br>1nst<br>38<br>5.1 1<br>5.1 1<br>5.1 1<br>5.1 1<br>5.1 1<br>4.6 1<br>1<br>1<br>2.2   
  | able       00* B       /8-in.       /8 | Exp<br>TUH<br>64<br>13.7<br>6.1<br>3.0<br>1.5<br>ated<br>7<br>10   | In:           38           6.1           6.1           6.1           6.1           7   | Ven<br>1/2-ir<br>sulat<br>51<br>18.3<br>9.1<br>6.1<br>4.6<br>102<br>9.1       
  | t Lengt<br>ion<br>64<br>15.2<br>7.6<br>4.6<br>3.0<br>38<br>4.6  | th in U<br>38<br>6.1<br>4.6<br>3.0<br>1.5<br>8<br>3/8<br>51<br>15.2  | 9.1<br>9.1<br>4.6<br>1.5   | ondit<br>sulate<br>64<br>9.1<br>3 3.0<br>5<br>5<br>5<br>5<br>5<br>5<br>5<br>5<br>5<br>5<br>5<br>5<br>5<br>5<br>5<br>5<br>5<br>5<br>5   
  | 76<br>76<br>7.6<br>3.0<br>JH<br>ttion<br>76<br>22.9  | <b>3/8 3/8 6.1 6.1 6.1 6.1 6.1 102 102 103</b>   | e - M<br>60,00<br>-in. In<br>51<br>22.9<br>12.2<br>7.6<br>4.6<br>2<br>2<br>3<br>4  | eter<br>0 BT<br>sula<br>64<br>19.8<br>9.1<br>6.1<br>4.6<br>38  | s<br>UH<br>tion<br>76<br>18.<br>7.0<br>4.0<br>3.0<br>1/<br>51<br>15.   | 6 3<br>.3 6<br>6 6<br>6 6<br>72-in<br>1<br>.2   
   | 1/2·<br>38<br>3.1<br>3.1<br>3.1<br>3.1<br>3.1<br>3.1<br>3.1<br>3.1   | -in. lr<br>51<br>25.9<br>13.7<br>9.1<br>6.1<br>ilatic  | <b>64</b><br>22.9<br>12.2<br>7.6<br>4.6<br><b>n</b><br><b>76</b><br>1.3   | ion<br>76<br>9.1<br>6.1<br>3.0<br>102<br>21.3   
  |
| Winter<br>Design<br>Temp °C<br>Winter<br>Design<br>Temp °C                                | Unit<br>Size<br>Pipe<br>Dia. mm<br>-7<br>-18<br>-29<br>-40<br>Unit Si<br>Pipe Dia.<br>-7<br>-18   | Unii<br>38<br>6.1<br>3.0<br>1.5<br>ze<br>mm   | Maxim<br>nsulat<br>51<br>6.1<br>1.5<br>38<br>4.6<br>4.6   | ed<br>64<br>6.1 (0<br>1.5 (0<br>0<br>0<br>0<br>0<br>0<br>0<br>0<br>0<br>0<br>0<br>0<br>0<br>0<br>0<br>0<br>0<br>0<br>0   | Allow           40,00           3/           Inst           38           5.1           5.1           5.1           5.1           5.1           5.1           5.1           3.1           5.1           6.1           5.2           .1   
  | able<br>00* B<br>(8-in.<br>ulatio<br>51<br>5.2<br>7.6<br>4.6<br>3.0<br>nsula<br>64<br>12.2<br>4.6   | Exp<br>TUH<br>64<br>13.7<br>6.1<br>3.0<br>1.5<br>ated<br>70<br>10<br>3.0<br>1.5  | In:           38           6.1           6.1           4.6           6           .7           0   
  | Ven<br>1/2-ir<br>sulat<br>51<br>18.3<br>9.1<br>6.1<br>4.6<br>102<br>9.1<br>1.5   | t Lengt<br>ion<br>64<br>15.2<br>7.6<br>4.6<br>3.0<br>38<br>4.6<br>4.6   | th in U<br>38<br>6.1<br>4.6<br>3.0<br>1.5<br>8<br>3/8<br>51<br>15.2<br>15.2  | 0,000  | ondit           sulate           64           9.1           3.00           00 BTI           Insula           64           27.4           13.7   
   | <b>76</b><br>7.6<br>3.0<br><b>JH</b><br><b>76</b><br>22.9<br>10.7  | <b>3/8</b><br><b>3/8</b><br><b>6</b> .1<br><b>6</b> .1<br><b>6</b> .1<br><b>6</b> .1<br><b>6</b> .1<br><b>102</b><br><b>102</b><br><b>103</b><br><b>9</b> .1   | e - M<br>60,000<br>-in. In<br>51<br>22.9<br>12.2<br>7.6<br>4.6<br>2<br>3<br>4.6  | eter<br>0 BT<br>sula<br>64<br>19.8<br>9.1<br>6.1<br>4.6<br>88<br>1.6   | S<br>UH<br>tion<br>76<br>18.<br>7.(.<br>4.(.<br>4.(.<br>1/<br>51<br>15.<br>15.  
  | 6 3<br>.3 6<br>6 6<br>6 6<br>72-in<br>1<br>.2<br>.2   | 1/2-<br>38<br>5.1<br>5.1<br>5.1<br>5.1<br>5.1<br>5.1<br>5.1<br>64<br>21.3<br>15.2  | -in. Ir<br>51<br>25.9<br>13.7<br>9.1<br>6.1<br>ulatic  | <b>64</b><br>22.9<br>12.2<br>7.6<br>4.6<br><b>1</b> .3<br>2.2   | ion<br>76<br>9.1<br>6.1<br>3.0<br>102<br>21.3<br>10.7  
   |
| Winter<br>Design<br>Temp °C<br>Winter<br>Design<br>Temp °C                                | Unit<br>Size<br>Pipe<br>Dia. mm<br>-7<br>-18<br>-29<br>-40<br>Unit Si<br>Pipe Dia.<br>-7<br>-18<br>-29  | Unii<br>38<br>6.1<br>3.0<br>1.5<br>ze<br>mm   | Maxim<br>nsulat<br>51<br>6.1<br>1.5<br>38<br>4.6<br>4.6<br>4.6  | ed<br>64<br>6.1 (<br>1.5 (<br>0<br>5<br>5<br>12<br>5<br>6<br>6<br>12<br>6<br>6<br>6<br>12<br>6<br>6<br>6<br>12<br>6<br>6<br>7<br>2   | Allow           40,00           3/           Inst           38           5.1           5.1           5.1           5.1           4.6           2.2           .1           0   
  | able<br>00* B<br>78-in.<br>ulatic<br>51<br>5.2<br>7.6<br>4.6<br>3.0<br>12.2<br>4.6<br>12.2<br>4.6<br>15.2<br>1.5<br>1.5<br>1.5<br>1.5<br>1.5<br>1.5<br>1.5<br>1.5   | Exp<br>TUH<br>64<br>13.7<br>6.1<br>3.0<br>1.5<br>ated<br>7<br>10<br>3.0<br>1.5   | In           38           6.1           6.1           6.1           6.1           6.1           6.1           7           0   
  | Ven<br>1/2-ir<br>sulat<br>51<br>18.3<br>9.1<br>6.1<br>4.6<br>102<br>9.1<br>1.5   | t Lengt<br>ion<br>15.2<br>7.6<br>4.6<br>3.0<br>38<br>4.6<br>4.6<br>4.6<br>4.6   | th in U<br>38<br>6.1<br>4.6<br>3.0<br>1.5<br>8<br>3/8<br>51<br>15.2<br>10.7  | ncc           Jnin           51           9.1           4.6           1.5           0,00           -in.           2  | ondit           sulate           64           9.1           3.00           5           00 BTI           Insula           64           27.4           13.7           9.1   
   | oned           76           7.6           3.0           JH           tion           76           22.9           10.7           6.1   | <b>3/8</b><br><b>3/8</b><br><b>6</b> .1<br><b>6</b> .1<br><b>6</b> .1<br><b>6</b> .1<br><b>6</b> .1<br><b>10</b> 2<br><b>19</b> .1<br><b>9</b> .1<br><b>4</b> .6   | e - M<br>60,00<br>-in. In<br>51<br>22.9<br>12.2<br>7.6<br>4.6<br>2<br>3<br>4.6   | eter<br>0 BT<br>sula<br>64<br>19.8<br>9.1<br>6.1<br>4.6<br>88<br>1.6<br>1.6  | S<br>UH<br>tion<br>76<br>18.<br>7.0<br>4.0<br>3.0<br>10<br>51<br>15.<br>15.<br>15.  
  | 6 3<br>.3 6 6 6<br>6 6 6<br>72-in<br>1 2<br>2 2   | 1/2-<br>38<br>5.1<br>5.1<br>5.1<br>5.1<br>5.1<br>5.1<br>5.1<br>5.1   | in. lr<br>51<br>25.9<br>13.7<br>9.1<br>6.1<br>Jlatic   | <b>64</b><br>22.9<br>12.2<br>7.6<br>4.6<br><b>76</b><br>1.3<br>2.2<br>7.6   | ion<br>76<br>19.8<br>9.1<br>6.1<br>3.0<br>21.3<br>10.7<br>4.6  
   |
| Winter<br>Design<br>Temp °C<br>Winter<br>Design<br>Temp °C                                | Unit<br>Size<br>Pipe<br>Dia. mm<br>-7<br>-18<br>-29<br>-40<br>Unit Si<br>Pipe Dia.<br>-7<br>-18<br>-29<br>-40   | Unii<br>38<br>6.1<br>3.0<br>1.5<br>ze<br>mm   | Maxim<br>nsulat<br>51<br>6.1<br>1.5<br>38<br>4.6<br>4.6<br>4.6<br>4.6   | ed<br>64<br>64<br>1.5<br>6<br>1.5<br>6<br>2<br>2<br>5<br>6<br>6<br>6<br>3<br>3<br>0<br>12  | Allow<br>40,00<br>3/<br>Inst<br>38<br>5.1 1<br>5.1 7<br>4.6 3<br>Uni<br>1.6 3<br>0.5 5   | able           00* B           00* B           8-in.           18-in.           51           5.2           7.6           4.6           3.0           nsula           64           12.2           4.6           1.5  | Exp<br>TUH<br>64<br>13.7<br>6.1<br>3.0<br>1.5<br>ated<br>7<br>10<br>3.0<br>1.5   | In:           38           6.1           6.1           6.1           6.1           6.1           6.1           7           0   | Ven<br>1/2-ir<br>sulat<br>51<br>18.3<br>9.1<br>6.1<br>4.6<br>102<br>9.1<br>1.5   | t Lengt<br>ion<br>15.2<br>7.6<br>4.6<br>3.0<br>38<br>4.6<br>4.6<br>4.6<br>4.6<br>4.6  | th in U<br>38<br>6.1<br>4.6<br>3.0<br>1.5<br>8<br>3/8<br>51<br>15.2<br>15.2<br>15.2<br>15.2<br>15.7<br>6<br>7<br>6   | ncc<br>Jnin<br>51<br>4.6<br>1.5<br>0,00<br>-in.  | ondit           sulate           64           9.1           3.00           5           00 BTI           Insula           64           27.4           13.7           9.1           6.1   | 76<br>76<br>7.6<br>3.0<br>JH<br>tion<br>76<br>22.9<br>10.7<br>6.1  | <b>3/8</b><br><b>3/8</b><br><b>6</b> .1<br><b>6</b> .1<br><b>6</b> .1<br><b>6</b> .1<br><b>6</b> .1<br><b>6</b> .1<br><b>7</b> .1<br><b>9</b> .1<br><b>1</b> .6<br><b>1</b> .7<br><b>1</b> | e - M<br>60,00<br>-in. In<br>51<br>22.9<br>12.2<br>7.6<br>4.6<br>2<br>3<br>4.6   | eter<br>0 BT<br>sula<br>64<br>19.8<br>9.1<br>6.1<br>4.6<br>1.6<br>1.6<br>1.6   | S<br>UH<br>tion<br>76<br>18.<br>7.(.<br>4.(.<br>3.()<br>1//<br>51<br>15.<br>15.<br>12.<br>9  | 6 3<br>.3 6<br>6 6 6<br>0 6<br>/2-in<br>1<br>.2<br>.2<br>1  | 1/2-<br>38<br>3.1<br>3.1<br>5.1<br>5.1<br>5.1<br>5.1<br>5.1<br>5.1<br>5.1<br>5   | -in. Ir<br>51<br>25.9<br>13.7<br>9.1<br>6.1<br>Jlatic  | <b>64</b><br>22.9<br>12.2<br>7.6<br>4.6<br><b>76</b><br>1.3<br>2.2<br>7.6   | ion<br>76<br>19.8<br>9.1<br>6.1<br>3.0<br>21.3<br>10.7<br>4.6<br>3.0   |
| Winter<br>Design<br>Temp °C<br>Winter<br>Design<br>Temp °C                                | Unit<br>Size<br>Pipe<br>Dia. mm<br>-7<br>-18<br>-29<br>-40<br>Unit Si<br>Pipe Dia.<br>-7<br>-18<br>-29<br>-18<br>-29<br>-40   | Unii<br>38<br>6.1<br>3.0<br>1.5<br>ze<br>mm   | Maxim           nsulat           51           6.1           1.5           38           4.6           4.6           4.6           3.0  | ed<br>64<br>6.1 (<br>1.5 (<br>1.5 (<br>6)<br>6<br>5<br>5<br>5<br>12<br>5<br>6<br>6<br>3<br>3<br>0 1  | Allow           40,00           3/           Instant           38           3.1           3.1           3.1           4.6           2.2           .1           .0           .5  
  | able<br>00* B<br>(8-in.<br>18-in.<br>18-in.<br>15-2<br>7.6<br>4.6<br>3.0<br>15-2<br>7.6<br>4.6<br>3.0<br>12.2<br>4.6<br>1.5   | e Exp<br>TUH<br>64<br>13.7<br>6.1<br>3.0<br>1.5<br>ated<br>70<br>10<br>3.0<br>1.5  | In:           38           6.1           6.1           6.1           4.6  
  | Ven<br>1/2-ir<br>sulat<br>51<br>18.3<br>9.1<br>6.1<br>4.6<br>102<br>9.1<br>1.5   | t Lengt<br>ion<br>15.2<br>7.6<br>4.6<br>3.0<br>38<br>4.6<br>4.6<br>4.6<br>4.6<br>4.6<br>4.6   | th in U<br>38<br>6.1<br>4.6<br>3.0<br>1.5<br>8<br>3/8<br>51<br>15.2<br>15.2<br>15.2<br>10.7<br>7.6   | ncc           Jnin           51           9.1           4.6           1.5           0,00           -in.           2           2           2           2           2           2  | ondit           sulate           64           9.1           3.00           5           00 BTI           Insula           64           27.4           13.7           9.1           6.1           0.0 BTI   
   | 76<br>76<br>7.6<br>3.0<br>JH<br>ttion<br>76<br>22.9<br>10.7<br>6.1<br>4.6  | Space           3/8           38           6.1           6.1           6.1           6.1           6.1           9.1           9.1           4.6           1.5   | e - M<br>60,00<br>-in. In<br>22.9<br>12.2<br>7.6<br>4.6<br>4.6<br>2<br>3<br>4<br>4<br>5<br>4<br>4<br>5<br>4<br>4<br>5<br>4<br>4<br>5<br>4<br>4<br>5<br>4<br>4<br>5<br>4<br>4<br>5<br>4<br>4<br>5<br>4<br>4<br>5<br>4<br>4<br>5<br>4<br>4<br>5<br>4<br>4<br>5<br>4<br>4<br>5<br>5<br>4<br>4<br>5<br>5<br>4<br>5<br>5<br>4<br>5<br>5<br>5<br>5<br>5<br>5<br>5<br>5<br>5<br>5<br>5<br>5<br>5<br>5<br>5<br>5<br>5<br>5<br>5<br>5   | eter<br>0 BT<br>sula<br>64<br>19.8<br>9.1<br>6.1<br>4.6<br>4.6<br>4.6<br>4.6<br>4.6  | S<br>UH<br>tion<br>7 €<br>18.<br>7 .6<br>3.0<br>1/<br>51<br>15.<br>15.<br>12.<br>9.7  
  | 6 3<br>.3 6<br>6 6 6<br>0 6<br>/2-in<br>1<br>.2<br>.2<br>.2<br>1  | 1/2-<br>38<br>3.1<br>3.1<br>3.1<br>3.1<br>3.1<br>4<br>21.3<br>15.2<br>9.1<br>7.6   | -in. Ir<br>51<br>25.9<br>13.7<br>9.1<br>6.1<br>Jlatic  | 64           22.9           12.2           7.6           4.6           0n           76           1.3           2.2           7.6           1.3           2.2           7.6           1.3           2.1  | ion<br>76<br>19.8<br>9.1<br>6.1<br>3.0<br>21.3<br>10.7<br>4.6<br>3.0   
   |
| Winter<br>Design<br>Temp °C<br>Winter<br>Design<br>Temp °C                                | Unit<br>Size<br>Pipe<br>Dia. mm<br>-7<br>-18<br>-29<br>-40<br>Unit Si<br>Pipe Dia.<br>-7<br>-18<br>-29<br>-40<br>Unit Si<br>-29<br>-40<br>Unit Si   | Unii<br>38<br>6.1<br>3.0<br>1.5<br>Ze<br>mm   | Maxim<br>nsulat<br>6.1<br>1.5<br>38<br>4.6<br>4.6<br>4.6<br>4.6<br>3.0  | ed<br>64<br>6.1 (6<br>1.5 (6<br>6.5<br>5<br>5<br>12<br>5<br>6<br>6<br>3<br>3<br>0 1  | Milow           40,00         3/           Inst         3/           38         5.1         1           5.1         1         5.1           3.1         -         -           4.6         :         -           11         2.2         -           1.1         -         -           0         -         -           5.5         -         -  
  | able<br>00* B<br>(8-in.<br>18-in.<br>18-in.<br>15-2<br>7.6<br>4.6<br>3.0<br>15-2<br>7.6<br>4.6<br>3.0<br>12.2<br>4.6<br>1.5<br>1.5  | e Exp<br>TUH<br>500<br>64<br>13.7<br>6.1<br>3.0<br>1.5<br>ated<br>70<br>10<br>3.0<br>1.5   | In:           38           6.1           6.1           6.1           6.1           6.1           7           0           1  
  | Ven<br>1/2-ir<br>sulat<br>51<br>18.3<br>9.1<br>6.1<br>4.6<br>102<br>9.1<br>1.5   | t Lengt<br>ion<br>15.2<br>7.6<br>4.6<br>3.0<br>38<br>4.6<br>4.6<br>4.6<br>4.6<br>4.6  | th in U<br>38<br>6.1<br>4.6<br>3.0<br>1.5<br>8<br>3/8<br>51<br>15.2<br>15.2<br>15.2<br>15.2<br>10.7<br>7.6<br>0<br>0   | ncc<br>Jnin<br>51<br>4.6<br>1.5<br>0,00<br>-in.  | 64           9.1           3.00           BTI           Insula           64           27.4           13.7           9.1           6.1           00 BTI  
   | 76           7.6           3.0           JH           ttion           76           22.9           10.7           6.1           4.6           UH  | Space           3/8           6.1           6.1           6.1           6.1           6.1           6.1           6.1           9.1           4.6           1.5  | e - M<br>60,000<br>-in. In<br>22.9<br>12.2<br>7.6<br>4.6<br>2<br>3<br>4<br>4.6   | eter<br>0 BT<br>sula<br>64<br>19.8<br>9.1<br>6.1<br>4.6<br>4.6<br>4.6<br>4.6<br>4.6  | S<br>UH<br>tion<br>7 €<br>18.<br>7 .<br>4.0.<br>3.0<br>11/<br>51<br>15.<br>12.<br>9.7   
  | 6 3<br>.3 6<br>6 6<br>6 6<br>0 6<br>/2-in<br>1<br>.2<br>.2<br>1<br>1  | 1/2-<br>38<br>3.1<br>3.1<br>3.1<br>3.1<br>3.1<br>3.1<br>3.1<br>4<br>21.3<br>15.2<br>9.1<br>7.6<br>-  | -in. Ir<br>51<br>25.9<br>13.7<br>9.1<br>6.1<br>Jlatic<br>1<br>2<br>1<br>1<br>7<br>7<br>6<br>6  | 64<br>22.9<br>12.2<br>7.6<br>4.6<br>7.6<br>1.3<br>2.2<br>7.6<br>5.1   | ion<br>76<br>19.8<br>9.1<br>6.1<br>3.0<br>21.3<br>10.7<br>4.6<br>3.0   
   |
| Winter<br>Design<br>Temp °C<br>Winter<br>Design<br>Temp °C                                | Unit<br>Size<br>Pipe<br>Dia. mm<br>-7<br>-18<br>-29<br>-40<br>Unit Si<br>Pipe Dia.<br>-7<br>-18<br>-29<br>-40<br>Unit Si  | Unii<br>38<br>6.1<br>3.0<br>1.5<br>Ze<br>mm   | Maxim<br>nsulat<br>6.1<br>1.5<br>38<br>4.6<br>4.6<br>4.6<br>3.0   | ed<br>64<br>6.1 (<br>1.5 (<br>2<br>5<br>5<br>5<br>12<br>5<br>6<br>6<br>3<br>0 1  | Vilow           40,00           3/           Inst           38           5.1           5.1           1           5.1           1           2.2           .1           0           .5           Unit           1           .1           .0           .5  
  | able<br>00* B<br>(8-in-<br>ulation<br>51<br>5.2<br>7.6<br>4.6<br>3.0<br>12.2<br>4.6<br>1.5<br>1.5<br>1.5<br>1.5<br>1.5<br>1.5<br>1.5<br>1.5   | e Exp<br>TUH<br>64<br>13.7<br>6.1<br>3.0<br>1.5<br>ated<br>7<br>10<br>3.0<br>1.5<br>ated   | In           38           6.1           6.1           6.1           6.1           6.1           6.1           0           0   
  | Ven<br>1/2-ir<br>sulat<br>51<br>18.3<br>9.1<br>6.1<br>4.6<br>102<br>9.1<br>1.5<br>   | t Lengt<br>ion<br>64<br>15.2<br>7.6<br>4.6<br>3.0<br>38<br>4.6<br>4.6<br>4.6<br>4.6<br>4.6  | th in U<br>38<br>6.1<br>4.6<br>3.0<br>1.5<br>8<br>3/8<br>51<br>15.2<br>15.2<br>15.2<br>10.7<br>7.6<br>10<br>7.6<br>10<br>3/8   | ncc<br>Jnin<br>9.1<br>4.6<br>1.5<br>0,00<br>-in.   | 64           9.1           3.0           5           000 BTI           Insula           64           27.4           13.7           9.1           6.1           00 BTI           Insula  
   | 76           7.6           3.0           JH           ttion           76           22.9           10.7           6.1           4.6           UH           ttion  | <b>3/8 3/8 6</b> .1 <b>6</b> .1 <b>6</b> .1 <b>6</b> .1 <b>6</b> .1 <b>7 10 10 10 10 10 10 10 10</b>   | e - M<br>60,000<br>-in. In<br>51<br>22.9<br>12.2<br>7.6<br>4.6<br>2<br>2<br>3<br>4<br>4<br>4<br>5<br>4<br>6<br>4<br>6<br>4<br>6<br>4<br>6<br>4<br>6<br>4<br>6<br>4<br>6<br>4<br>6<br>6<br>6<br>6<br>6<br>6<br>6<br>6<br>6<br>6<br>6<br>6<br>6  | eter<br>0 BT<br>sula<br>64<br>19.8<br>9.1<br>6.1<br>4.6<br>88<br>8.6<br>1.6<br>1.6   | s<br>UH<br>tion<br>76<br>18.<br>7.0<br>4.0<br>3.0<br>7.0<br>51<br>15.<br>15.<br>12.<br>9.7  
  | 6 (<br>.3 (<br>6 (<br>6 (<br>6 (<br>6 (<br>6 (<br>7 (<br>2 - in<br>1 (<br>2 - in<br>1 (<br>/2 - in<br>1 (<br>/2 - in)   | 1/2-<br>38<br>3.1<br>3.1<br>3.1<br>3.1<br>3.1<br>3.1<br>3.1<br>3.1   | -in. Ir<br>51<br>25.9<br>13.7<br>9.1<br>6.1<br>Jlatic  | 64<br>22.9<br>7.6<br>4.6<br>7.6<br>1.3<br>2.2<br>.6<br>.1<br>.1<br>.1<br>.1<br>.0   | ion<br>76<br>9.1<br>6.1<br>3.0<br>21.3<br>10.7<br>4.6<br>3.0   
   |
| Winter<br>Design<br>Temp °C<br>Winter<br>Design<br>Temp °C<br>Winter                      | Unit<br>Size<br>Pipe<br>Dia. mm<br>-7<br>-18<br>-29<br>-40<br>Unit Si<br>Pipe Dia.<br>-7<br>-18<br>-29<br>-40<br>Unit Si<br>Pipe Dia.<br>Pipe Dia.  | Unii<br>38<br>6.1<br>3.0<br>1.5<br>Ze<br>mm   | Maxim<br>nsulat<br>51<br>6.1<br>1.5<br>38<br>4.6<br>4.6<br>4.6<br>4.6<br>3.0  | ed<br>64<br>6.1 (0<br>1.5 (0<br>6)<br>55<br>5<br>12<br>5<br>6 12<br>5<br>6 33<br>0 1   | Allow           40,00           3/           Inst           38           5.1           5.1           1           5.1           1.1           2.2           .1           .0           .5           Unit           .1           .0           .5           Unit           .6   
  | able<br>00* B<br>(8-in-<br>ulation<br>51<br>5.2<br>7.6<br>4.6<br>3.0<br>12.2<br>4.6<br>1.5<br>1.5<br>1.5<br>1.5<br>1.5<br>1.5<br>1.5<br>1.5   | Exp<br>TUH<br>64<br>13.7<br>6.1<br>3.0<br>1.5<br>ated<br>7<br>10<br>3.0<br>1.5<br>ated<br>7<br>7<br>7<br>7<br>7<br>7<br>7<br>7<br>7<br>7<br>7<br>7<br>7  | In:           38           6.1           6.1           6.1           6.1           6.1           6.1           0           0           1           1  
  | Ven<br>1/2-ir<br>sulat<br>51<br>18.3<br>9.1<br>4.6<br>102<br>9.1<br>1.5<br>02  | t Lengt<br>ion<br>15.2<br>7.6<br>4.6<br>3.0<br>38<br>4.6<br>4.6<br>4.6<br>4.6<br>4.6<br>4.6<br>4.6<br>51  | th in U<br>38<br>6.1<br>4.6<br>3.0<br>1.5<br>8<br>3/8<br>51<br>15.2<br>15.2<br>15.2<br>10.7<br>7.6<br>10<br>7.6<br>10<br>7.6   | 0,00<br>0,00<br>0,00<br>0,00<br>0,00<br>0,00<br>0,00<br>0,00<br>0,00<br>0,00<br>0,00<br>0,00<br>0,00<br>0,00<br>0,00<br>0,00<br>0,00<br>0,00<br>0,00<br>0,00<br>0,00<br>0,00<br>0,00<br>0,00<br>0,00<br>0,00<br>0,00<br>0,00<br>0,00<br>0,00<br>0,00<br>0,00<br>0,00<br>0,00<br>0,00<br>0,00<br>0,00<br>0,00<br>0,00<br>0,00<br>0,00<br>0,00<br>0,00<br>0,00<br>0,00<br>0,00<br>0,00<br>0,00<br>0,00<br>0,00<br>0,00<br>0,00<br>0,00<br>0,00<br>0,00<br>0,00<br>0,00<br>0,00<br>0,00<br>0,00<br>0,00<br>0,00<br>0,00<br>0,00<br>0,00<br>0,00<br>0,00<br>0,00<br>0,00<br>0,00<br>0,00<br>0,00<br>0,00<br>0,00<br>0,00<br>0,00<br>0,00<br>0,00<br>0,00<br>0,00<br>0,00<br>0,00<br>0,00<br>0,00<br>0,00<br>0,00<br>0,00<br>0,00<br>0,00<br>0,00<br>0,00<br>0,00<br>0,00<br>0,00<br>0,00<br>0,00<br>0,00<br>0,00<br>0,00<br>0,00<br>0,00<br>0,00<br>0,00<br>0,00<br>0,00<br>0,00<br>0,00<br>0,00<br>0,00<br>0,00<br>0,00<br>0,00<br>0,00<br>0,00<br>0,00<br>0,00<br>0,00<br>0,00<br>0,00<br>0,00<br>0,00<br>0,00<br>0,00<br>0,00<br>0,00<br>0,00<br>0,00<br>0,00<br>0,00<br>0,00<br>0,00<br>0,00<br>0,00<br>0,00<br>0,00<br>0,00<br>0,00<br>0,00<br>0,00<br>0,00<br>0,00<br>0,00<br>0,00<br>0,00<br>0,00<br>0,00<br>0,00<br>0,00<br>0,00<br>0,00<br>0,00<br>0,00<br>0,00<br>0,00<br>0,00<br>0,00<br>0,00<br>0,00<br>0,00<br>0,00<br>0,00<br>0,00<br>0,00<br>0,00<br>0,00<br>0,00<br>0,00<br>0,00<br>0,00<br>0,00<br>0,00<br>0,00<br>0,00<br>0,00<br>0,00<br>0,00<br>0,00<br>0,00<br>0,00<br>0,00<br>0,00<br>0,00<br>0,00<br>0,00<br>0,00<br>0,00<br>0,00<br>0,00<br>0,00<br>0,00<br>0,00<br>0,00<br>0,00<br>0,00<br>0,00<br>0,00<br>0,00<br>0,00<br>0,00<br>0,00<br>0,00<br>0,00<br>0,00<br>0,00<br>0,00<br>0,00<br>0,00<br>0,00<br>0,00<br>0,00<br>0,00<br>0,00<br>0,00<br>0,00<br>0,00<br>0,00<br>0,00<br>0,00<br>0,00<br>0,00<br>0,00<br>0,00<br>0,00<br>0,00<br>0,00<br>0,00<br>0,00<br>0,00<br>0,00<br>0,00<br>0,00<br>0,00<br>0,00<br>0,00<br>0,00<br>0,00<br>0,00<br>0,00<br>0,00<br>0,00<br>0,00<br>0,00<br>0,00<br>0,00<br>0,00<br>0,00<br>0,00<br>0,00<br>0,00<br>0,00<br>0,00<br>0,00<br>0,00<br>0,00<br>0,00<br>0,00<br>0,00<br>0,00<br>0,00<br>0,00<br>0,00<br>0,00<br>0,00<br>0,00<br>0,00<br>0,00<br>0,00<br>0,00<br>0,00<br>0,00<br>0,00<br>0,00<br>0,00<br>0,00<br>0,00<br>0,00<br>0,00<br>0,00<br>0,00<br>0,00<br>0,00<br>0,00<br>0,00<br>0,00<br>0,00<br>0,00<br>0,00<br>0,00<br>0,00<br>0,00<br>0,00<br>0,00<br>0,00<br>0,00<br>0,00<br>0,00<br>0,00<br>0,00<br>0,00<br>0,00<br>0,00<br>0,00<br>0,00<br>0,00<br>0,00<br>0,00<br>0,00<br>0,00<br>0,00<br>0,00<br>0,00<br>0,00<br>0,00<br>0,00<br>0,00<br>0,00<br>0,00<br>0,00<br>0,00<br>0,00<br>0,00<br>0,00<br>0,00<br>0,00<br>0,00<br>0,00<br>0,00<br>0,00<br>0,00<br>0,00<br>0,00<br>0,00<br>0,00<br>0,00<br>0,00<br>0,00<br>0,00<br>0,00<br>0,00<br>0,00<br>0,00 | 64           9.11           3.00           5           00 BTI           Insula           64           27.4           13.7           9.1           6.1           00 BTI           Insula   
   | 76           7.6           3.0           JH           tion           76           22.9           10.7           6.1           4.6           UH           ttion           76  | <b>Spac</b><br>3/8<br>38<br>6.1<br>6.1<br>6.1<br>6.1<br>6.1<br>6.1<br>6.1<br>9.1<br>9.1<br>4.6<br>1.5<br>102   | e - M<br>60,000<br>-in. In<br>51<br>22.9<br>12.2<br>7.6<br>4.6<br>2<br>2<br>3<br>4<br>4<br>4<br>4<br>4<br>4<br>4<br>4<br>4<br>4<br>4<br>4<br>4   | eter<br>0 BT<br>sula<br>64<br>19.8<br>9.1<br>6.1<br>4.6<br>88<br>8.6<br>1.6<br>1.6<br>51   | S<br>UH<br>tion<br>76<br>18.<br>7.0<br>4.0<br>3.0<br>11<br>15.<br>15.<br>12.<br>9.7<br>11<br>12.<br>12.   
  | 6 6 6<br>6 6 6<br>6 6 6<br>72-in<br>1 72-in<br>72-in<br>64  | 1/2<br>38<br>3.1<br>3.1<br>3.1<br>3.1<br>3.1<br>3.1<br>3.1<br>3.1  | -in. lr<br>51<br>25.9<br>13.7<br>9.1<br>6.1<br>Jlatic<br>2<br>1<br>1<br>7<br>6<br>1<br>1<br>1<br>1<br>2<br>7<br>6  | nsulat           64           22.9           7.6           4.6           7.6           1.3           2.2           7.6           3.1           3.1  | ion<br>76<br>19.8<br>9.1<br>6.1<br>3.0<br>21.3<br>10.7<br>4.6<br>3.0<br>102<br>102   
   |
| Winter<br>Design<br>Temp °C<br>Winter<br>Design<br>Temp °C<br>Winter<br>Design            | Unit<br>Size<br>Dia. mm<br>-7<br>-18<br>-29<br>-40<br>Unit Si<br>Pipe Dia.<br>-7<br>-18<br>-29<br>-40<br>Unit Si<br>Pipe Dia.<br>-7   | Unii<br>38<br>6.1<br>3.0<br>1.5<br>ze<br>mm   | Maxim<br>nsulat<br>51<br>6.1<br>1.5<br>38<br>4.6<br>4.6<br>4.6<br>3.0<br>57<br>6.   | ed<br>64<br>6.1 (0<br>1.5 (0<br>6<br>5<br>5<br>12<br>6<br>6<br>6<br>3<br>0 1<br>1<br>1<br>1  | Allow           40,00           3/           Inst           38           3.1           3.1           3.1           4.6           1           2.2           .1           0           .5           Unit           1           .0           .5           Unit           64           15.2  
  | able<br>00* B<br>78-in.<br>ulatic<br>51<br>5.2<br>5.2<br>7.6<br>4.6<br>3.0<br>12.2<br>4.6<br>1.5<br>1.5<br>1.5<br>1.5<br>1.5<br>1.5<br>1.5<br>1.5   | Exp<br>TUH<br>64<br>13.7<br>6.1<br>3.0<br>1.5<br>ated<br>7<br>10<br>3.0<br>1.5<br>4<br>4<br>7<br>10<br>3.0<br>1.5<br>4<br>7<br>10<br>10<br>10<br>10<br>10<br>10<br>10<br>10<br>10<br>10  | In:           38           6.1           6.1           6.1           6.1           6.1           6.1           6.1           1           1  
  | Ven<br>1/2-ir<br>sulat<br>51<br>18.3<br>9.1<br>4.6<br>102<br>9.1<br>1.5<br>02<br>0.7   | t Lengt<br>ion<br>64<br>15.2<br>7.6<br>4.6<br>3.0<br>38<br>4.6<br>4.6<br>4.6<br>4.6<br>4.6<br>4.6<br>51<br>6.1                                    | th in U<br>38<br>6.1<br>4.6<br>3.0<br>1.5<br>8<br>3/8<br>51<br>15.2<br>15.2<br>10.7<br>7.6<br>10<br>7.6<br>10<br>3/8   | 9.11<br>9.11<br>9.11<br>4.6<br>1.5<br>0,00<br>-in.<br>-in.<br>-in.<br>-in.<br>-in.<br>-in.<br>-in.<br>-in.   | Sulate           64           9.1.0           3.00           5           00 BTI           Insula           64           27.4           13.7           9.1           6.1           00 BTI           Insula           2.1           1.1           2.2   
   | 76           7.6           3.0           JH           ttion           76           22.9           10.7           6.1           4.6           UH           ttion           76           8.9   | <b>Space 3/8 38</b> 6.1 6.1 6.1 6.1 6.1 9.1 9.1 9.1 9.1 9.1 102 24.4   | e - M<br>60,000<br>-in. In<br>51<br>22.9<br>12.2<br>7.6<br>4.6<br>2<br>2<br>3<br>4<br>4<br>4<br>4<br>4<br>4<br>4<br>4<br>4<br>4<br>4<br>4<br>4   | eter<br>0 BT<br>sula<br>64<br>19.8<br>9.1<br>6.1<br>4.6<br>88<br>4.6<br>4.6<br>51<br>6.1   | S<br>UH<br>tion<br>7.6<br>18.3<br>7.0<br>4.0<br>4.0<br>3.0<br>1/<br>51<br>15.<br>15.<br>12.<br>9.1<br>1/  
  | 6 6 6<br>6 6 6<br>6 6 6<br>72-in<br>1 72-in<br>1 72-in<br>64 24.4   | 1/2<br>38<br>3.1<br>3.1<br>3.1<br>3.1<br>4<br>21.3<br>15.2<br>9.1<br>7.6<br>. Insu<br>. Insu<br>. Insu   | -in. lr<br>51<br>25.9<br>13.7<br>9.1<br>6.1<br>Jlatic<br>2<br>1<br>1<br>1<br>1<br>1<br>1<br>1<br>0<br>0<br>0<br>0<br>1<br>1<br>0<br>0<br>0<br>1<br>0<br>0<br>1<br>0<br>0<br>1<br>0<br>0<br>1<br>0<br>0<br>1<br>0<br>0<br>1<br>0<br>0<br>1<br>0<br>0<br>1<br>0<br>0<br>1<br>0<br>0<br>1<br>0<br>0<br>1<br>0<br>0<br>1<br>0<br>0<br>1<br>0<br>0<br>1<br>0<br>0<br>1<br>0<br>0<br>1<br>0<br>0<br>1<br>0<br>0<br>1<br>0<br>0<br>1<br>0<br>0<br>1<br>0<br>0<br>1<br>0<br>0<br>1<br>0<br>0<br>1<br>0<br>0<br>1<br>0<br>0<br>1<br>0<br>0<br>1<br>0<br>0<br>1<br>0<br>0<br>1<br>0<br>0<br>1<br>0<br>0<br>1<br>0<br>0<br>1<br>0<br>0<br>1<br>0<br>0<br>1<br>0<br>0<br>1<br>0<br>0<br>1<br>0<br>0<br>1<br>0<br>0<br>1<br>0<br>0<br>1<br>0<br>0<br>1<br>0<br>0<br>1<br>0<br>0<br>1<br>0<br>0<br>1<br>0<br>0<br>1<br>0<br>0<br>1<br>0<br>0<br>1<br>0<br>0<br>1<br>0<br>0<br>1<br>0<br>0<br>1<br>0<br>0<br>1<br>0<br>0<br>1<br>0<br>0<br>1<br>0<br>0<br>1<br>0<br>0<br>1<br>0<br>0<br>1<br>0<br>0<br>0<br>0<br>0<br>0<br>0<br>0<br>0<br>0<br>0<br>0<br>0<br>0<br>0<br>0<br>0<br>0<br>0<br>0   | 64<br>22.9<br>7.6<br>4.6<br>1.3<br>2.2<br>7.6<br>1.3<br>2.2<br>7.6<br>1.3<br>2.2<br>7.6<br>1.3<br>2.2<br>7.6<br>1.3<br>2.2<br>7.6<br>1.3<br>2.2<br>7.6<br>1.3<br>2.2<br>7.6<br>1.3<br>2.2<br>9<br>1.3<br>1.3<br>2.2<br>9<br>1.3<br>1.3<br>1.3<br>1.3<br>1.3<br>1.3<br>1.3<br>1.3<br>1.3<br>1.3  | ion<br>76<br>19.8<br>9.1<br>6.1<br>3.0<br>102<br>21.3<br>10.7<br>4.6<br>3.0<br>102<br>27.4   
   |
| Winter<br>Design<br>Temp °C<br>Winter<br>Design<br>Temp °C<br>Winter<br>Design<br>Temp °C | Unit<br>Size<br>Pipe<br>Dia. mm<br>-7<br>-18<br>-29<br>-40<br>Unit Si<br>Pipe Dia.<br>-7<br>-18<br>-29<br>-40<br>Unit Si<br>Pipe Dia.<br>-7<br>-7<br>-18  | Unii<br>38<br>6.1<br>3.0<br>1.5<br>ze<br>mm   | Maxim<br>nsulat<br>51<br>6.1<br>1.5<br>38<br>4.6<br>4.6<br>4.6<br>3.0<br>5'<br>6.<br>6.   | ed<br>64<br>6.1<br>6.1<br>6.1<br>6<br>5<br>6<br>12<br>6<br>6<br>3<br>0<br>1<br>1<br>1<br>1<br>1  | Allow           40,00           3/           Inst           38           3.1           3.1           3.1           4.6           1           2.2           .1           .0           .5           Unit           1           .0           .5           Unit           64           15.2           6.1   
  | able<br>00* B<br>(8-in.<br>18-in.<br>18-in.<br>51<br>5.2<br>5.2<br>5.2<br>5.2<br>5.2<br>5.2<br>5.2<br>5.2   | Exp<br>TUH<br>64<br>13.7<br>6.1<br>3.0<br>1.5<br>ated<br>70<br>10<br>3.0<br>1.5<br>4.6<br>12.2<br>4.6  | In:           38           6.1           6.1           6.1           6.1           6.1           7           0           1           10           33  
  | Ven<br>1/2-ir<br>sulat<br>51<br>18.3<br>9.1<br>4.6<br>102<br>9.1<br>1.5<br>02<br>0.7<br>3.0  | t Lengt<br>ion<br>64<br>15.2<br>7.6<br>4.6<br>3.0<br>38<br>4.6<br>4.6<br>4.6<br>4.6<br>4.6<br>4.6<br>4.6<br>51<br>6.1<br>6.1                      | th in U<br>38<br>6.1<br>4.6<br>3.0<br>1.5<br>8<br>3/8<br>51<br>15.2<br>15.2<br>15.2<br>10.7<br>7.6<br>10<br>3/8<br>0<br>0<br>2.2   | Incomposition           Jnin           51           9.1           4.6           1.5           0,000           -in.   | Sulate           64           9.1           3.00           5           00 BTI           Insula           64           27.4           13.7           9.1           6.1           00 BTI           Insula           6.1           00 BT           13.7           9.1           6.1           00 BT           10.1           11.5           12.7   
   | Television           76           7.6           3.0           JH           ttion           76           22.9           10.7           6.1           4.6           UH           ttion           76           8.9           3.7  | <b>Space</b><br>3/8<br>38<br>6.1<br>6.1<br>6.1<br>6.1<br>6.1<br>6.1<br>6.1<br>9.1<br>9.1<br>9.1<br>9.1<br>4.6<br>1.5<br><b>102</b><br>24.4<br>10.7   | e - M<br>60,000<br>-in. In<br>51<br>22.9<br>12.2<br>7.6<br>4.6<br>2<br>2<br>3<br>4<br>4<br>4<br>4<br>4<br>5<br>4<br>4<br>5<br>4<br>6<br>4<br>6<br>7<br>6<br>7<br>6<br>7<br>6<br>7<br>6<br>7<br>7<br>7<br>6<br>7<br>7<br>7<br>7<br>7<br>7<br>7<br>7<br>7<br>7<br>7<br>7<br>7  | eter<br>0 BT<br>sula<br>64<br>19.8<br>9.1<br>6.1<br>4.6<br>88<br>4.6<br>4.6<br>4.6<br>4.6<br>51<br>6.1<br>6.1<br>6.1               | s<br>UH<br>tion<br>7.0<br>18.<br>7.0<br>4.0<br>3.0<br>11/<br>51<br>15.<br>12.<br>9.7<br>1/   | 6 (<br>.3 (<br>6 (<br>6 (<br>6 (<br>7<br>2-in<br>1<br>.2<br>.2<br>.2<br>.2<br>.2<br>.2<br>.2<br>.2<br>.2<br>.2   
  | 1/2<br>38<br>3.1<br>3.1<br>5.1<br>5.1<br>64<br>21.3<br>15.2<br>9.1<br>7.6<br>15.2<br>9.1<br>7.6  | -in. Ir<br>51<br>25.9<br>13.7<br>9.1<br>6.1<br>Jlatic<br>2<br>2<br>1<br>1<br>1<br>7<br>6<br>6<br>1<br>1<br>2<br>6<br>7<br>6<br>32.0<br>16.7  | 64<br>22.9<br>12.2<br>7.6<br>4.6<br>7.6<br>1.3<br>2.2<br>7.6<br>3.1   | ion<br>76<br>19.8<br>9.1<br>6.1<br>3.0<br>102<br>21.3<br>10.7<br>4.6<br>3.0<br>102<br>27.4<br>13.7   
   |
| Winter<br>Design<br>Temp °C<br>Winter<br>Design<br>Temp °C<br>Winter<br>Design<br>Temp °C | Unit<br>Size<br>Pipe<br>Dia. mm<br>-7<br>-18<br>-29<br>-40<br>Unit Si<br>Pipe Dia.<br>-7<br>-18<br>-29<br>-40<br>Unit Si<br>Pipe Dia.<br>-7<br>-7<br>-18<br>-29   | Unii<br>38<br>6.1<br>3.0<br>1.5<br>ze<br>mm   | Maxim<br>nsulat<br>51<br>6.1<br>1.5<br>388<br>4.6<br>4.6<br>4.6<br>50<br>50<br>6.<br>6.<br>6.<br>4.0<br>4.6<br>4.6<br>4.6<br>4.6<br>4.6<br>4.6<br>4.6<br>4.6  | ed<br>64<br>6.1<br>6.1<br>6.1<br>6<br>5<br>6<br>12<br>6<br>6<br>12<br>6<br>6<br>12<br>6<br>12<br>6<br>12<br>6<br>12<br>6<br>12<br>6<br>12<br>6<br>12<br>6<br>12<br>6<br>12<br>6<br>12<br>6<br>12<br>6<br>12<br>6<br>12<br>6<br>12<br>6<br>12<br>6<br>12<br>6<br>12<br>6<br>12<br>6<br>12<br>6<br>12<br>6<br>12<br>6<br>12<br>6<br>12<br>6<br>12<br>6<br>12<br>6<br>12<br>6<br>12<br>6<br>12<br>6<br>12<br>6<br>12<br>6<br>12<br>6<br>12<br>6<br>12<br>6<br>12<br>6<br>12<br>6<br>12<br>6<br>12<br>6<br>12<br>6<br>12<br>6<br>12<br>6<br>12<br>6<br>12<br>6<br>12<br>6<br>12<br>6<br>12<br>6<br>12<br>6<br>12<br>6<br>12<br>12<br>6<br>12<br>12<br>12<br>12<br>12<br>12<br>12<br>12<br>12<br>12   | Allow           40,00           3/           Inst           38           3.1           3.1           3.1           4.6           3.1           4.6           4.6           1           2.2           .1           .0           .5           Unit           64           15.2           6.1           3.0  
  | able<br>00* B<br>18-in.<br>18-in.<br>18-in.<br>51<br>5.2<br>5.2<br>5.2<br>5.2<br>5.2<br>5.2<br>5.2<br>5.2   | Exp<br>TUH<br>64<br>13.7<br>6.1<br>3.0<br>1.5<br>ated<br>70<br>10<br>3.0<br>1.5<br>4.6<br>12.2<br>4.6<br>1.5   | In:           38           6.1           6.1           6.1           6.1           6.1           7           0           1           10           33  
  | Ven<br>1/2-ir<br>sulat<br>51<br>18.3<br>9.1<br>4.6<br>102<br>9.1<br>1.5<br>02<br>0.7<br>3.0  | t Lengt<br>ion<br>64<br>15.2<br>7.6<br>4.6<br>3.0<br>38<br>4.6<br>4.6<br>4.6<br>4.6<br>4.6<br>4.6<br>4.6<br>51<br>6.1<br>6.1<br>6.1               | th in U<br>38<br>6.1<br>4.6<br>3.0<br>1.5<br>8<br>3/8<br>51<br>15.2<br>15.2<br>15.2<br>10.7<br>7.6<br>10<br>3/8<br>0<br>0<br>2.2<br>11   | Incomposition           9.1           9.1           4.6           1.5           0,00           -in.           00,00           -in.           64           4.4           5.8           0.7  | Sulate           64           9.1           3.00           5           00 BTI           Insula           64           27.4           13.7           9.1           6.1           00 BTI           Insula           64           27.4           13.7           9.1           6.1           00 BTI           Insula           2           1           5  
   | Oned           76           7.6           3.0           JH           ttion           76           22.9           10.7           6.1           4.6           UH           ttion           76           8.9           3.7           0.1  | <b>Space</b><br>3/8<br>38<br>6.1<br>6.1<br>6.1<br>6.1<br>6.1<br>6.1<br>9.1<br>9.1<br>9.1<br>4.6<br>1.5<br><b>102</b><br>24.4<br>10.7<br>6.1  | e - M<br>60,000<br>-in. In<br>51<br>22.9<br>12.2<br>7.6<br>4.6<br>2<br>2<br>3<br>4<br>4<br>4<br>5<br>4<br>6<br>4<br>6<br>4<br>6<br>7<br>6<br>4<br>6<br>7<br>6<br>4<br>6<br>7<br>6<br>7<br>6<br>7<br>7<br>6<br>7<br>7<br>7<br>7<br>7<br>7<br>7<br>7<br>7<br>7<br>7<br>7<br>7  | eter<br>0 BT<br>sula<br>64<br>19.8<br>9.1<br>6.1<br>4.6<br>88<br>4.6<br>4.6<br>4.6<br>4.6<br>51<br>6.1<br>6.1<br>6.1<br>6.1        | S<br>UH<br>tion<br>18<br>18<br>7.0<br>4.0<br>4.0<br>3.0<br>10<br>15<br>15<br>15<br>15<br>15<br>12<br>9<br>7<br>10<br>10<br>10<br>10<br>10<br>10<br>10<br>10<br>10<br>10<br>10<br>10<br>10   
  | 6 (<br>.3 (<br>6 (<br>6 (<br>6 (<br>7   | 1/2-<br>38<br><u>5.1</u><br><u>5.1</u><br><u>5.1</u><br><u>5.1</u><br><u>64</u><br><u>7.6</u><br><u>15.2</u><br><u>9.1</u><br><u>15.2</u><br><u>9.1</u><br><u>15.2</u><br><u>9.1</u><br><u>15.2</u><br><u>9.1</u><br><u>15.2</u><br><u>9.1</u><br><u>15.3</u><br><u>15.3</u><br><u>15.4</u><br><u>15.4</u><br><u>15.4</u><br><u>15.4</u><br><u>15.4</u><br><u>15.5</u><br><u>15.4</u><br><u>15.4</u><br><u>15.5</u><br><u>15.4</u><br><u>15.5</u><br><u>15.4</u><br><u>15.5</u><br><u>15.5</u><br><u>15.5</u><br><u>15.5</u><br><u>15.5</u><br><u>15.5</u><br><u>15.5</u><br><u>15.5</u><br><u>15.5</u><br><u>15.5</u><br><u>15.5</u><br><u>15.5</u><br><u>15.5</u><br><u>15.5</u><br><u>15.5</u><br><u>15.5</u><br><u>15.5</u><br><u>15.5</u><br><u>15.5</u><br><u>15.5</u><br><u>15.5</u><br><u>15.5</u><br><u>15.5</u><br><u>15.5</u><br><u>15.5</u><br><u>15.5</u><br><u>15.5</u><br><u>15.5</u><br><u>15.5</u><br><u>15.5</u><br><u>15.5</u><br><u>15.5</u><br><u>15.5</u><br><u>15.5</u><br><u>15.5</u><br><u>15.5</u><br><u>15.5</u><br><u>15.5</u><br><u>15.5</u><br><u>15.5</u><br><u>15.5</u><br><u>15.5</u><br><u>15.5</u><br><u>15.5</u><br><u>15.5</u><br><u>15.5</u><br><u>15.5</u><br><u>15.5</u><br><u>15.5</u><br><u>15.5</u><br><u>15.5</u><br><u>15.5</u><br><u>15.5</u><br><u>15.5</u><br><u>15.5</u><br><u>15.5</u><br><u>15.5</u><br><u>15.5</u><br><u>15.5</u><br><u>15.5</u><br><u>15.5</u><br><u>15.5</u><br><u>15.5</u><br><u>15.5</u><br><u>15.5</u><br><u>15.5</u><br><u>15.5</u><br><u>15.5</u><br><u>15.5</u><br><u>15.5</u><br><u>15.5</u><br><u>15.5</u><br><u>15.5</u><br><u>15.5</u><br><u>15.5</u><br><u>15.5</u><br><u>15.5</u><br><u>15.5</u><br><u>15.5</u><br><u>15.5</u><br><u>15.5</u><br><u>15.5</u><br><u>15.5</u><br><u>15.5</u><br><u>15.5</u><br><u>15.5</u><br><u>15.5</u><br><u>15.5</u><br><u>15.5</u><br><u>15.5</u><br><u>15.5</u><br><u>15.5</u><br><u>15.5</u><br><u>15.5</u><br><u>15.5</u><br><u>15.5</u><br><u>15.5</u><br><u>15.5</u><br><u>15.5</u><br><u>15.5</u><br><u>15.5</u><br><u>15.5</u><br><u>15.5</u><br><u>15.5</u><br><u>15.5</u><br><u>15.5</u><br><u>15.5</u><br><u>15.5</u><br><u>15.5</u><br><u>15.5</u><br><u>15.5</u><br><u>15.5</u><br><u>15.5</u><br><u>15.5</u><br><u>15.5</u><br><u>15.5</u><br><u>15.5</u><br><u>15.5</u><br><u>15.5</u><br><u>15.5</u><br><u>15.5</u><br><u>15.5</u><br><u>15.5</u><br><u>15.5</u><br><u>15.5</u><br><u>15.5</u><br><u>15.5</u><br><u>15.5</u><br><u>15.5</u><br><u>15.5</u><br><u>15.5</u><br><u>15.5</u><br><u>15.5</u><br><u>15.5</u><br><u>15.5</u><br><u>15.5</u><br><u>15.5</u><br><u>15.5</u><br><u>15.5</u><br><u>15.5</u><br><u>15.5</u><br><u>15.5</u><br><u>15.5</u><br><u>15.5</u><br><u>15.5</u><br><u>15.5</u><br><u>15.5</u><br><u>15.5</u><br><u>15.5</u><br><u>15.5</u><br><u>15.5</u><br><u>15.5</u><br><u>15.5</u><br><u>15.5</u><br><u>15.5</u><br><u>15.5</u><br><u>15.5</u><br><u>15.5</u><br><u>15.5</u><br><u>15.5</u><br><u>15.5</u><br><u>15.5</u><br><u>15.5</u><br><u>15.5</u><br><u>15.5</u><br><u>15.5</u><br><u>15.5</u><br><u>15.5</u><br><u>15.5</u><br><u>15.5</u><br><u>15.5</u><br><u>15.5</u><br><u>15.5</u><br><u>15.5</u><br><u>15.5</u><br><u>15.5</u><br><u>15.5</u><br><u>15.5</u><br><u>15.5</u><br><u>15.5</u><br><u>15.5</u><br><u>15.5</u><br><u>15.5</u><br><u>15.5</u><br><u>15.5</u><br><u>15.5</u><br><u>15.5</u><br><u>15.5</u><br><u>15.5</u><br><u>15.5</u><br><u>15.5</u><br><u>15.5</u><br><u>15.5</u><br><u>15.5</u><br><u>15.5</u><br><u>15.5</u><br><u>15.5</u><br><u>15.5</u><br><u>15.5</u><br><u>15.5</u><br><u>15.5</u><br><u>15.5</u><br><u>15.5</u><br><u>15.5</u><br><u>15.5</u><br><u>15.5</u><br><u>15.5</u><br><u>15.5</u><br><u>15.5</u><br><u>15.5</u><br><u>15.5</u><br><u>15.5</u><br><u>15.5</u><br><u>15.5</u><br><u>15.5</u><br><u>15.5</u><br><u>15.5</u><br><u>15.5</u><br><u>15.5</u><br><u>15.5</u><br><u>15.5</u><br><u>15.5</u><br><u>15.5</u><br><u>15.5</u><br><u>15.5</u><br><u>15.5</u> | -in. Ir<br>51<br>25.9<br>13.7<br>9.1<br>6.1<br>Jlatic<br>2<br>2<br>1<br>1<br>1<br>7<br>6<br>32.0<br>16.7<br>10.7   | 64<br>22.9<br>12.2<br>7.6<br>4.6<br>7.6<br>1.3<br>2.2<br>7.6<br>5.1   | ion<br>76<br>19.8<br>9.1<br>6.1<br>3.0<br>102<br>21.3<br>10.7<br>4.6<br>3.0<br>102<br>27.4<br>13.7<br>7.6  
   |
| Winter<br>Design<br>Temp °C<br>Winter<br>Design<br>Temp °C<br>Winter<br>Design<br>Temp °C | Unit<br>Size<br>Pipe<br>Dia. mm<br>-7<br>-18<br>-29<br>-40<br>Unit Si<br>Pipe Dia.<br>-7<br>-18<br>-29<br>-40<br>Unit Si<br>Pipe Dia.<br>-7<br>-18<br>-7<br>-18<br>-29<br>-40                                       | Unii<br>38<br>6.1<br>3.0<br>1.5<br>22<br>mm   | Maxim<br>nsulat<br>51<br>6.1<br>1.5<br>388<br>4.6<br>4.6<br>4.6<br>5.7<br>6.<br>6.<br>4.6<br>4.6<br>4.6<br>4.6<br>4.6<br>4.6  | ed<br>64<br>64<br>6.1<br>6.1<br>6.1<br>6<br>6<br>1.5<br>6<br>6<br>2<br>2<br>6<br>6<br>12<br>6<br>6<br>12<br>6<br>6<br>12<br>6<br>6<br>12<br>6<br>6<br>12<br>6<br>12<br>6<br>6<br>12<br>6<br>12<br>6<br>6<br>11<br>12<br>6<br>6<br>12<br>6<br>6<br>12<br>6<br>6<br>12<br>6<br>6<br>12<br>6<br>6<br>12<br>6<br>6<br>12<br>6<br>6<br>6<br>12<br>6<br>6<br>12<br>6<br>6<br>6<br>12<br>6<br>6<br>6<br>6<br>12<br>6<br>6<br>6<br>6<br>6<br>12<br>6<br>6<br>6<br>6<br>6<br>6<br>6<br>6<br>6<br>6<br>6<br>6<br>6   | Allow           40,00           3/           Ins           38           3.1           3.1           3.1           4.6           1           2.2           1           1           5           Unit           64           15.2           6.1           3.0           1.5  
  | able<br>00* B<br>8-in.<br>ulatio<br>51<br>5.2<br>7.6<br>4.6<br>3.0<br>12.2<br>4.6<br>1.5<br>1.5<br>1.5<br>1.5<br>1.5<br>1.5<br>1.5<br>1.5   | Exp<br>TUH<br>64<br>13.7<br>6.1<br>3.0<br>1.5<br>ated<br>70<br>10<br>3.0<br>1.5<br>4.6<br>12.2<br>4.6<br>1.5   | In:           38           6.1           6.1           6.1           7           0           1           10           3   
  | Ven<br>1/2-ir<br>sulat<br>51<br>18.3<br>9.1<br>4.6<br>9.1<br>4.6<br>9.1<br>1.5<br>0.7<br>3.0   | t Lengt<br>ion<br>64<br>15.2<br>7.6<br>4.6<br>3.0<br>38<br>4.6<br>4.6<br>4.6<br>4.6<br>4.6<br>4.6<br>4.6<br>4.6<br>4.6<br>4.6                     | th in U<br>38<br>6.1<br>4.6<br>3.0<br>1.5<br>8<br>3/8<br>3/8<br>51<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>10.7<br>6<br>(<br>3/8<br>(<br>3/8<br>(<br>1<br>1<br>1<br>2<br>2<br>(<br>1<br>1<br>1<br>7<br>7  | Incomposition           9.1           9.1           4.6           1.5           0,00           -in.           2.2           00,00           -in.           2.2           3.4           4.4           5.8           0.7           .6  | Sulate           64           9.1           3.3.0           5           00 BTU           Insula           64           13.7           9.1           6.1           00 BT           Insula           6.1           00 BT           13.7           9.1           6.1           00 BT           10.1           10.2           1           2           1           2           1           5   
   | Oned           76           7.6           3.0           JH           ttion           76           22.9           10.7           6.1           4.6           UH           ttion           76           8.9           3.7           1.1           5.1  | <b>Space</b><br>3/8<br>38<br>6.1<br>6.1<br>6.1<br>6.1<br>6.1<br>102<br>19.1<br>9.1<br>4.6<br>1.5<br>102<br>24.4<br>10.7<br>6.1<br>3.0  | e - M<br>60,000<br>-in. In<br>51<br>22.9<br>12.2<br>7.6<br>4.6<br>2<br>2<br>3<br>4<br>4<br>4<br>4<br>4<br>4<br>4<br>4<br>4<br>4<br>4<br>4<br>4   | eter<br>0 BT<br>sula<br>64<br>19.8<br>9.1<br>6.1<br>6.1<br>6.1<br>6.1<br>6.1<br>6.1<br>6.1<br>6.1<br>6.1<br>6                      | S<br>UH<br>tion<br>76<br>18.<br>7.6<br>18.<br>7.6<br>18.<br>7.6<br>4.0<br>4.0<br>1.7<br>15.<br>15.<br>15.<br>12.<br>17.<br>17.<br>17.<br>17.<br>17.<br>17.<br>17.<br>17   
  | 6 :<br>.3 : 6<br>6 : 6<br>6 : 6<br>6 : 6<br>72-in<br>1<br>.2<br>.2<br>.2<br>.2<br>.2<br>.2<br>.2<br>.2<br>.2<br>.2  | 1/2-<br>38<br>3.1<br>3.1<br>3.1<br>3.1<br>3.1<br>3.1<br>4<br>21.3<br>15.2<br>9.1<br>7.6<br>9.1<br>15.2<br>9.1<br>15.2<br>9.1<br>15.2<br>9.1<br>15.2<br>9.1<br>15.2<br>9.1<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>1   | -in. Ir<br>51<br>25.9<br>13.7<br>9.1<br>6.1<br>Jlatic<br>2<br>2<br>1<br>1<br>Jlatic<br>32.0<br>16.7<br>10.7<br>7.6   | 64<br>22.9<br>12.2<br>7.6<br>4.6<br>7.6<br>1.3<br>2.2<br>7.6<br>5.1<br>0<br>n   | ion<br>76<br>19.8<br>9.1<br>6.1<br>3.0<br>21.3<br>10.7<br>4.6<br>3.0<br>27.4<br>13.7<br>7.6<br>4.6   
   |
| Winter<br>Design<br>Temp °C<br>Winter<br>Design<br>Temp °C<br>Winter<br>Design<br>Temp °C | Unit<br>Size<br>Pipe<br>Dia. mm<br>-7<br>-18<br>-29<br>-40<br>Unit Si<br>Pipe Dia.<br>-7<br>-18<br>-29<br>-40<br>Unit Si<br>Pipe Dia.<br>-7<br>-18<br>-29<br>-40  | Unii<br>38<br>6.1<br>3.0<br>1.5<br>Z2<br>mm   | Maxim           nsulat           51           6.1           1.5           38           4.6           5.7           6.           4.1           4.1   | ed<br>64<br>64<br>5<br>6.1 (6<br>1.5 (6<br>6<br>1.5 (6<br>6<br>1.2<br>6<br>6<br>1.2<br>6<br>6<br>1.2<br>6<br>6<br>1.2<br>6<br>6<br>1.2<br>6<br>6<br>1.2<br>6<br>6<br>1.2<br>6<br>6<br>1.2<br>6<br>6<br>1.2<br>6<br>6<br>1.2<br>6<br>6<br>1.2<br>6<br>6<br>6<br>1.2<br>6<br>6<br>6<br>1.2<br>6<br>6<br>6<br>6<br>6<br>1.2<br>6<br>6<br>6<br>6<br>6<br>6<br>6<br>6<br>6<br>6<br>6<br>6<br>6  | Allow           40,00           3/           Ins           38           3.1           3.1           3.1           4.6           1           2.2           1           1           5           0           0           15.2           6.1           3.0           1.5  
  | able           00* B           8-in.           18-in.           51           5.2           7.6           4.6           3.0           12.2           4.6           1.5   | Exp<br>TUH<br>64<br>13.7<br>6.1<br>3.0<br>1.5<br>1.5<br>1.5<br>10<br>10<br>3.0<br>10<br>10<br>10<br>10<br>10<br>10<br>10<br>10<br>10<br>1  | In:           38           6.1           6.1           6.1           7           0           1           10           33  
  | Ven<br>1/2-ir<br>sulat<br>51<br>18.3<br>9.1<br>6.1<br>4.6<br>9.1<br>1.5<br>02<br>0.7<br>3.0  | t Lengt<br>ion<br>64<br>15.2<br>7.6<br>4.6<br>3.0<br>38<br>4.6<br>4.6<br>4.6<br>4.6<br>4.6<br>4.6<br>4.6<br>4.6<br>4.6<br>51<br>6.1<br>6.1<br>6.1 | th in U<br>38<br>6.1<br>4.6<br>3.0<br>1.5<br>8<br>3/8<br>51<br>15.2<br>15.2<br>15.2<br>10.7<br>7.6<br>3/8<br>0<br>20<br>10<br>10<br>7<br>7   | Incomposition           9.1           9.1           4.6           1.5           0,00           -in.           2           00,00           -in.           2           34           4.4           5.8           0.7           .6   | Sulate           64           9.1           3 3.0           5 3.0           64           13.7           9.1           6.1           00 BT           Insula           27.4           13.7           9.1           6.1           00 BT           Insula           2           1           2           1           2           1           2           1           2   
   | Oned           76           7.6           3.0           JH           tion           76           22.9           10.7           6.1           UH           3.7           3.7           3.1  | Space           3/8           38           6.1           6.1           6.1           6.1           6.1           6.1           6.1           6.1           6.1           6.1           6.1           102           19.1           4.6           102           24.4           10.7           6.1           3.0  | e - M<br>60,00<br>-in. In<br>51<br>22.9<br>12.2<br>7.6<br>4.6<br>2<br>2<br>3<br>4<br>4<br>4<br>4<br>4<br>4<br>4<br>4<br>4<br>4<br>4<br>4<br>4  | eter<br>0 BT<br>sula<br>64<br>19.8<br>9.1<br>6.1<br>4.6<br>4.6<br>4.6<br>4.6<br>51<br>6.1<br>6.1<br>6.1<br>6.1                     | S<br>UH<br>tion<br>76<br>18.<br>7.6<br>18.<br>7.6<br>4.0<br>4.0<br>4.0<br>10<br>11<br>15.<br>12.<br>9.<br>10<br>10<br>10<br>10<br>10<br>10<br>10<br>10<br>10<br>10  
  | 6 :<br>.3 (6<br>6 (6<br>6 (6<br>0 (6<br>72-in<br>1<br>.2<br>.2<br>.2<br>.2<br>.2<br>.2<br>.2<br>.2<br>.2<br>.2  | 1/2-<br>38<br>3.1<br>3.1<br>3.1<br>3.1<br>3.1<br>3.1<br>3.1<br>4<br>21.3<br>15.2<br>9.1<br>7.6<br>9.1<br>7.6<br>15.2<br>9.1<br>7.6<br>15.2<br>9.1<br>15.2<br>9.1<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15   | -in. Ir<br>51<br>25.9<br>13.7<br>9.1<br>6.1<br>Jattic<br>2<br>2<br>1<br>1<br>3<br>Jattic<br>7<br>6<br>32.0<br>16.7<br>7.0.7<br>7.0.7   | 64<br>22.9<br>12.2<br>7.6<br>4.6<br>1.3<br>2.2<br>7.6<br>3.1<br>7.6<br>3.1  | ion<br>76<br>19.8<br>9.1<br>6.1<br>3.0<br>21.3<br>10.7<br>4.6<br>3.0<br>27.4<br>13.7<br>7.6<br>4.6   
   |
Winter Design Temp °C Winter Design Temp °C Winter Design Temp °C	Unit Size Pipe Dia. mm -7 -18 -29 -40 Unit Si Pipe Dia. -7 -18 -29 -40 Unit Si Pipe Dia. -7 -18 -29 -40 Unit Si 29 -40	Image: Constraint of the second sec	Maxim           nsulat           51           6.1           1.5           38           4.6           4.6           4.6           4.6           4.6           4.6           4.6           4.6           3.0           5.1           6.           6.           4.1           3.1	ed 64 64 6.1 6.1 6.1 6 6 1.5 6 6 7 6 6 7 7 7 7 7 7 7 7 7 7 7 7 7	Allow           40,00           3/           Ins           38           3.1           3.1           4.6           3.1           4.6           3.1           4.6           3.1           4.6           3.1           4.6           5           Unit           6.1           3.0           1.5	able           00* B           88-in.           ulatii           51           5.2           7.6           4.6           3.0           12.2           4.6           1.5	Exp TUH 64 13.7 6.1 3.0 1.5 ated 70 10 3.0 1.5 4.6 12.2 4.6 1.5 20,000	In:           38           6.1           6.1           6.1           4.6           6           .7           0           1           10           33           6           .7           0           .7           0           .7           0           .7           0           .7           0           .7 <td< th=""><th>Ven 1/2-ir sulat 51 18.3 9.1 4.6 102 9.1 1.5 02 0.7 3.0 H</th><th>t Lengt ion 64 15.2 7.6 4.6 3.0 38 4.6 4.6 4.6 4.6 4.6 4.6 4.6 4.6 4.6 51 6.1 6.1 6.1</th><th>th in U 38 6.1 4.6 3.0 1.5 15.2 15.2 15.2 10.7 7.6 3/8 0 0 20 10 10 7 7</th><th>Incomposition           Jnin           9.1           4.6           1.5           0,00           -in.           2           -in.           5.4           4.4           5.8           0.7           .6</th><th>Sulate           64           9.1           3.00           5           00           BT           Insula           64           9.1           6.1           00           BT           Insula           6.1           00           BT           Insula           2           1           2           1           5           6</th><th>Oned           76           7.6           3.0           JH           tion           76           22.9           10.7           6.1           4.6           UH           ation           76           3.7           0.1</th><th>Space           3/8           38           6.1           6.1           6.1           6.1           6.1           6.1           6.1           6.1           6.1           6.1           6.1           6.1           19.3           9.1           4.6           1.5           102           24.4           10.7           6.1           3.0</th><th>e - M 60,00 -in. In 51 22.9 12.2 7.6 4.6 2 3 4 4 4 4 4 4 4 4 4 4 4 4 4</th><th>eter 0 BT sula 64 19.8 9.1 6.1 4.6 88 6 6 6 6 51 6.1 6.1 6.1 40,00</th><th>S UH tion 18. 7.6 18. 19. 19. 19. 19. 19. 19. 19. 19</th><th>6 3 .3 6 6 6 6 6 6 6 0 6 72-in 1 72-in 64 72-in 64 13.7 9.1 3TUH</th><th>1/2- 38 5.1 5.1 5.1 5.1 5.1 5.1 64 21.3 15.2 9.1 7.6 9.1 7.6 1</th><th>-in. Ir 51 25.9 13.7 9.1 6.1 Jattic 7 6 32.0 16.7 10.7 7.6</th><th>64 22.9 12.2 7.6 4.6 1.3 2.2 7.6 3.1 3.1 0 0 0 0 0 0</th><th>ion 76 19.8 9.1 6.1 3.0 102 21.3 10.7 4.6 3.0 27.4 13.7 7.6 4.6 </th></td<>	Ven 1/2-ir sulat 51 18.3 9.1 4.6 102 9.1 1.5 02 0.7 3.0 H	t Lengt ion 64 15.2 7.6 4.6 3.0 38 4.6 4.6 4.6 4.6 4.6 4.6 4.6 4.6 4.6 51 6.1 6.1 6.1	th in U 38 6.1 4.6 3.0 1.5 15.2 15.2 15.2 10.7 7.6 3/8 0 0 20 10 10 7 7	Incomposition           Jnin           9.1           4.6           1.5           0,00           -in.           2           -in.           5.4           4.4           5.8           0.7           .6	Sulate           64           9.1           3.00           5           00           BT           Insula           64           9.1           6.1           00           BT           Insula           6.1           00           BT           Insula           2           1           2           1           5           6	Oned           76           7.6           3.0           JH           tion           76           22.9           10.7           6.1           4.6           UH           ation           76           3.7           0.1	Space           3/8           38           6.1           6.1           6.1           6.1           6.1           6.1           6.1           6.1           6.1           6.1           6.1           6.1           19.3           9.1           4.6           1.5           102           24.4           10.7           6.1           3.0	e - M 60,00 -in. 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Winter Design Temp °C Winter Design Temp °C Winter Design Temp °C	Unit Size Pipe Dia. mm -7 -18 -29 -40 Unit Si Pipe Dia. -7 -18 -29 -40 Unit Si Pipe Dia. -7 -18 -29 -40 Unit Si	Image: Constraint of the second sec	Maxim           nsulat           51           6.1           1.5           38           4.6           4.6           4.6           4.6           4.6           4.6           3.0           5'           6.1           3.0           5'           6.1           3.0           5'           6.1           3.0           5'           6.1           6.2           7.0           5'           6.1           1.1           5'           6.1           1.1           1.1           5'           6.1           1.1           3.1           3.1	ed 64 64 6.1 6.1 6.1 6 6.1 6 6 6 1.5 6 6 6 12 6 6 12 6 6 12 6 6 12 12 6 12 12 6 12 12 6 12 12 12 12 12 12 12 12 12 12	Vilow           40,00           3/           Inst           38           5.1           5.1           5.1           1.1           5.1           1.6           3.1           1.6           1.1  <	able           00* B           88-in.           ulati           51           5.2           7.6           4.6           3.0           12.2           4.6           1.5	Exp TUH 64 13.7 6.1 3.0 1.5 ated 70 10 3.0 1.5 4.6 12.2 4.6 1.5 20,000 -in. 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Ir 51 25.9 13.7 9.1 6.1 13.7 9.1 6.1 14 10.7 7.6 32.0 10.7 7.6 7.6 7.6 7.2 10.7 7.6</th><th>64 22.9 12.2 7.6 4.6 7.6 3.1 90 7.6 3.1 90 90 90 90 90 90 90 90 90 90 90 90 90</th><th>ion 76 19.8 9.1 6.1 3.0 21.3 10.7 4.6 3.0 102 27.4 13.7 7.6 4.6 13.7 7.6 4.6 Ia.7 10.7 1</th></tr<>	Oned           76           7.6           3.0           JH           stion           76           22.9           10.7           6.1           4.6           UH           stion           76           8.9           3.7           0.1           3.1	Space           3/8           38           6.1           6.1           6.1           6.1           6.1           6.1           6.1           6.1           6.1           6.1           6.1           6.1           19.3           9.1           4.6           1.5           102           24.4           10.7           6.1           3.0           lated	e - M 60,000 -in. 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Winter Design Temp °C Winter Design Temp °C Winter Design Temp °C	Unit Size Pipe Dia. mm -7 -18 -29 -40 Unit Si Pipe Dia. -7 -18 -29 -40 Unit Si Pipe Dia. -7 -18 -29 -40 Unit Si Pipe Dia.	Image: Constraint of the second sec	Maxim nsulat 51 6.1 1.5 38 4.6 4.6 4.6 4.6 5 6. 5 6. 4.1 3.0 5 6. 4.6 4.6 4.6 4.6 4.6 4.6 4.6	ed 64 64 61 64 6 6 6 6 6 6 6 6 6 6 6 6 6	Vilow           40,00           3/           Inst           38           5.1           5.1           5.1           1.5.1           5.1           1.5.1           1.6           1.1           2.2           1.1           0           5.5           Unit           64           15.2           6.1           3.0           1.5           ted           102	able           00* B           8'8-in.           ulati           51           5.2           7.6           4.6           3.0             nsula           64           12.2           4.6           1.5             nsula           64           1.5	Exp       TUH       64       13.7       6.1       3.0       1.5       ated       70       12.2       4.6       1.5       20,0000       -in. In       4	In:           38           6.1           6.1           6.1           6.1           6.1           7           0           1           10           33           65           7           0           10           11           10           10           11           10           10           11           10           11           10           11           11           11           11           11           11           11           11           11           12           13           14           15           16	Ven 1/2-ir sulat 51 18.3 9.1 6.1 4.6 9.1 1.5 02 0.7 3.0 H on 1 02	t Lengt ion 64 15.2 7.6 4.6 3.0 38 4.6 4.6 4.6 4.6 4.6 4.6 4.6 4.6 4.6 4.6	th in U 38 6.1 4.6 3.0 1.5 8 3/8 51 15.2 15.2 15.2 15.2 15.2 15.2 15.2 10.7 7.6 10 3/8 6 10 7 6 10 7 6 10 7 6 10 7 6 10 7 6 10 7 7 7 7 7 6 10 7 7 7 7 7 7 7 7 7 7 7 7 7	ncc           Jnin           51           9.1           4.6           1.5           0,000           -in.           4.4           5.8           0.7           .6           0.7           .6	ondit           sulate           64           9.1           3.00           BTI           Insula           64           27.4           13.7           9.1           6.1           100 BTI           Insula           6.1           2           1           2           1           5           00 BTI           Insula <tr td=""></tr>	oned           76           7.6           3.0           JH           ttion           76           22.9           10.7           6.1           4.6           UH           ttion           76           8.9           3.7           .1           .1           76           8.9           3.7           .1           .1           76	Space           3/8           38           6.1           6.1           6.1           6.1           6.1           6.1           6.1           6.1           6.1           6.1           6.1           19.1           4.6           1.5           102           24.4           10.7           6.1           3.0           lated           102	e - M 60,000 -in. In 51 22.9 12.2 7.6 4.6 2 3 4 4 5 4 4 5 4 5 4 5 4 5 4 5 4 5 4 5 4 5 4 5 4 5 4 5 4 5 5 5 5 5 5 5 5 5 5 5 5 5	eter 0 BT sula 64 19.8 9.1 6.1 6.1 6.1 6.1 6.1 6.1 6.1 6.1 6.1 6	S UH tion 18 18 18 18 18 18 18 10 10 10 10 10 10 10 10 10 10	6 : .3 : 6 6 : 6 6 : 6 6 : 6 72-in 1 .2 .2 .2 .2 .2 .2 .2 .2 .2 .2	1/2 38 3.1 3.1 3.1 3.1 3.1 5.2 9.1 7.6 9.1 7.6 1 n 1 1 21.3 15.2 9.1 7.6 1 1 1 1 1 1 1 1 1 1 1 1 1	-in. Ir 51 25.9 13.7 9.1 6.1 11atic 22 13.7 9.1 6.1 10.7 7.6 32.0 10.7 7.6 7.6 10.7 7.6 10.7 7.6 10.7 7.6 10.7 10.	64 22.9 12.2 7.6 4.6 7.6 3.1 7.6 3.1 7.6 3.1 7.6 3.1 7.6 3.1 7.6 7.6 7.6 7.6 7.6 7.6 7.6 7.6 7.6 7.6	ion 76 19.8 9.1 6.1 3.0 102 21.3 10.7 4.6 3.0 102 27.4 13.7 7.6 4.6 102 27.4 13.7 7.6 4.6 10.7 10.
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| Winter<br>Design<br>Temp °C<br>Winter<br>Design<br>Temp °C<br>Winter<br>Design<br>Temp °C | Unit<br>Size<br>Pipe<br>Dia. mm<br>-7<br>-18<br>-29<br>-40<br>Unit Si<br>Pipe Dia.<br>-7<br>-18<br>-29<br>-40<br>Unit Si<br>Pipe Dia.<br>-7<br>-18<br>-29<br>-40<br>Unit Si<br>Pipe Dia.<br>-7<br>-18<br>-29<br>-40 | Unii<br>38<br>6.1<br>3.0<br>1.5<br>Ze<br>mm<br>ze<br>mm   | Maxim<br>nsulat<br>51<br>6.1<br>1.5<br>38<br>4.6<br>4.6<br>4.6<br>4.6<br>4.6<br>5<br>6.1<br>5<br>6.1<br>1.5<br>0<br>0<br>0<br>0<br>0<br>0<br>0<br>0<br>0<br>0<br>0<br>0<br>0  | ed<br>64<br>64<br>64<br>61<br>64<br>6<br>15<br>6<br>6<br>12<br>6<br>6<br>12<br>6<br>6<br>12<br>6<br>12<br>6<br>12<br>6<br>12<br>6<br>12<br>6<br>12<br>6<br>12<br>6<br>12<br>6<br>12<br>6<br>12<br>6<br>12<br>6<br>12<br>6<br>12<br>6<br>12<br>6<br>12<br>6<br>12<br>6<br>12<br>12<br>6<br>12<br>12<br>6<br>12<br>12<br>6<br>12<br>12<br>12<br>12<br>12<br>12<br>12<br>12<br>12<br>12   | Villow           40,00           3/           Inst           38           5.1           5.1           5.1           1.5.1           5.1           0.5.1           1.6           1.6           1.1           2.2           .1           0.5.5           Unit           64           15.2           6.1           3.0           1.5  | able       00* B       8'8-in.       ulatic       51       5.2       7.6       4.6       3.0         12.2       4.6       1.5         12.2       4.6       1.5         1.5         1.5         1.5         1.5         1.5         1.5  | e Exp<br>TUH<br>500<br>64<br>13.7<br>6.1<br>3.0<br>1.5<br>1.5<br>ated<br>70<br>10<br>3.0<br>1.5<br>20,000<br>-in. In<br>70<br>22,000<br>-in. In<br>70<br>22,0000<br>-in. In<br>70<br>-in. In<br>-in. In<br>70<br>-in. I | In           38           6.1           6.1           6.1           6.1           6.1           7           0           6           .7           0           1           10           33           BTUI           sulation           6           10           2           0           2  | Ven<br>1/2-ir<br>sulat<br>51<br>18.3<br>9.1<br>6.1<br>4.6<br>102<br>9.1<br>1.5<br>02<br>0.7<br>3.0<br>H<br>on 1<br>02<br>3.9   | t Lengt<br>ion<br>64<br>15.2<br>7.6<br>4.6<br>3.0<br>38<br>4.6<br>4.6<br>4.6<br>4.6<br>4.6<br>4.6<br>4.6<br>4.6<br>4.6<br>4.6                     | th in U<br>38<br>6.1<br>4.6<br>3.0<br>1.5<br>8<br>3/8<br>51<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>15.2<br>10.7<br>7.6<br>(0<br>3/8<br>6<br>10<br>7<br>6<br>10<br>7<br>6<br>10<br>7<br>7<br>6<br>10<br>7<br>7<br>6<br>10<br>7<br>7<br>6<br>10<br>7<br>7<br>6<br>10<br>7<br>7<br>6<br>10<br>7<br>7<br>6<br>10<br>7<br>7<br>6<br>10<br>7<br>7<br>6<br>10<br>7<br>7<br>6<br>10<br>7<br>7<br>6<br>10<br>7<br>7<br>6<br>10<br>7<br>7<br>6<br>10<br>7<br>7<br>6<br>10<br>7<br>7<br>6<br>10<br>7<br>7<br>6<br>10<br>7<br>7<br>6<br>10<br>7<br>7<br>6<br>10<br>7<br>7<br>6<br>10<br>7<br>7<br>6<br>10<br>7<br>7<br>6<br>10<br>7<br>7<br>6<br>10<br>7<br>7<br>6<br>10<br>7<br>7<br>8<br>8<br>8<br>8<br>8<br>8<br>8<br>8<br>8<br>8<br>8<br>8<br>8  | Incomposition           Jnin           9.1           4.6           1.5           00,00           -in.           0.4           4.4           5.8           0.7           .6           0.12           .00  | Sulate           64           9.1           3.00           5           000 BTI           Insula           64           27.4           13.7           9.1           6.1           00 BTI           Insula           2           1           2           1           2           1           2           1           2           1           2           1           2           1           2           1           2           1           2           1           2           1           3           4           5  | oned           76           7.6           3.0           JH           ttion           76           22.9           10.7           6.1           4.6           UH           ttion           76           8.9           3.7           1.1           3.1           3.1           3.1  | Space           3/8           38           6.1           6.1           6.1           6.1           6.1           6.1           6.1           6.1           6.1           6.1           6.1           19.3           9.1           4.6           1.5           102           24.4           10.7           6.1           3.0           lated           102           7  | e - M<br>60,000<br>-in. In<br>51<br>22.9<br>12.2<br>7.6<br>4.6<br>2<br>2<br>3<br>4<br>4<br>5<br>4<br>4<br>5<br>4<br>4<br>5<br>4<br>4<br>5<br>4<br>6<br>4<br>6<br>4<br>6<br>4<br>6<br>4<br>6<br>4<br>6<br>4<br>6<br>4<br>6<br>4<br>6<br>4<br>6<br>4<br>6<br>4<br>6<br>4<br>6<br>4<br>6<br>4<br>6<br>4<br>6<br>4<br>6<br>4<br>6<br>4<br>6<br>4<br>6<br>6<br>6<br>6<br>6<br>6<br>6<br>6<br>6<br>6<br>6<br>6<br>6  | eter<br>0 BT<br>sula<br>64<br>19.8<br>9.1<br>6.1<br>4.6<br>.6<br>.6<br>.6<br>.6<br>.6<br>.6<br>.6<br>.6<br>.6<br>.6<br>.6<br>.6    | S<br>UH<br>tion<br>7 (6<br>18.<br>7 (6<br>18.<br>7 (6<br>18.<br>7 (6<br>18.<br>7 (6<br>18.<br>7 (6<br>18.<br>7 (6<br>18.<br>7 (6<br>18.<br>18.<br>7 (6<br>18.<br>18.<br>7 (6<br>18.<br>18.<br>18.<br>18.<br>18.<br>18.<br>18.<br>18.   | 6 :<br>.3 ( ( 6<br>6 ( 6<br>0 ( 6<br>2 -in<br>1 .<br>2 .<br>2 .<br>2 .<br>2 .<br>1 .<br>2 .<br>2 .<br>2 .<br>1 .<br>2 .<br>2 .<br>2 .<br>1 .<br>2 .<br>2 .<br>2 .<br>1 .<br>2 .<br>2 .<br>2 .<br>2 .<br>2 .<br>1 .<br>2 .<br>2 .<br>2 .<br>2 .<br>2 .<br>2 .<br>2 .<br>2  | 1/2<br>38<br>3.1<br>3.1<br>3.1<br>3.1<br>3.1<br>5.1<br>5.1<br>64<br>21.3<br>15.2<br>9.1<br>7.6<br>9.1<br>7.6<br>1<br>1<br>1<br>1<br>1<br>1<br>2<br>1<br>1<br>2<br>1<br>1<br>1<br>2<br>1<br>1<br>1<br>1<br>1<br>1<br>1<br>1<br>1<br>1<br>1<br>1<br>1  | -in. Ir<br>51<br>25.9<br>9.1<br>6.1<br>Jlatic<br>76<br>32.0<br>16.7<br>10.7<br>7.6<br>7.6<br>7.6<br>4<br>1.5   | nsulat           64           22.9           12.2           7.6           1.3           2.2           7.6           3.1           0           .           .           19.8  | ion<br>19.8<br>9.1<br>6.1<br>3.0<br>102<br>21.3<br>10.7<br>4.6<br>3.0<br>102<br>27.4<br>13.7<br>7.6<br>4.6<br>102<br>27.4<br>13.7<br>7.6<br>4.6<br>3.0<br>102<br>27.4<br>13.7<br>7.6<br>4.6<br>3.0<br>102<br>27.4<br>13.7<br>7.6<br>4.6<br>3.0<br>102<br>27.4<br>13.7<br>7.6<br>4.6<br>3.0<br>102<br>27.4<br>13.7<br>7.6<br>4.6<br>3.0<br>102<br>27.4<br>13.7<br>7.6<br>4.6<br>3.0<br>102<br>27.4<br>13.7<br>7.6<br>4.6<br>3.0<br>102<br>27.4<br>13.7<br>7.6<br>4.6<br>3.0<br>102<br>27.4<br>13.7<br>7.6<br>4.6<br>3.0<br>102<br>27.4<br>13.7<br>7.6<br>4.6<br>3.8<br>102<br>27.4<br>13.7<br>7.6<br>4.6<br>3.8<br>102<br>27.4<br>13.7<br>7.6<br>4.6<br>3.8<br>102<br>27.4<br>13.7<br>7.6<br>3.8<br>102<br>27.4<br>13.7<br>7.6<br>3.8<br>102<br>27.4<br>13.7<br>7.6<br>3.8<br>102<br>27.4<br>13.7<br>7.6<br>3.8<br>102<br>27.4<br>13.7<br>7.6<br>3.8<br>102<br>27.4<br>13.7<br>7.6<br>3.8<br>102<br>27.4<br>13.7<br>7.6<br>3.8<br>102<br>27.4<br>13.7<br>7.6<br>3.8<br>102<br>102<br>102<br>102<br>102<br>102<br>102<br>102   |
| Winter<br>Design<br>Temp °C<br>Winter<br>Design<br>Temp °C<br>Winter<br>Design<br>Temp °C | Unit<br>Size<br>Pipe<br>Dia. mm<br>-7<br>-18<br>-29<br>-40<br>Unit Si<br>Pipe Dia.<br>-7<br>-18<br>-29<br>-40<br>Unit Si<br>Pipe Dia.<br>-7<br>-18<br>-29<br>-40<br>Unit Si<br>Pipe Dia.<br>-7<br>-18               | Unii<br>38<br>6.1<br>3.0<br>1.5<br>Ze<br>mm<br>ze<br>mm   | Maxim<br>nsulat<br>51<br>6.1<br>1.5<br>38<br>4.6<br>4.6<br>4.6<br>4.6<br>5.6<br>6.<br>6.<br>4.0<br>3.0<br>3.0<br>3.0<br>3.0<br>3.0  | ed<br>64<br>64<br>6.1<br>6.1<br>6<br>5<br>6<br>12<br>6<br>6<br>12<br>6<br>12<br>6<br>12<br>6<br>12<br>6<br>12<br>6<br>12<br>6<br>12<br>6<br>12<br>6<br>12<br>6<br>12<br>6<br>12<br>6<br>12<br>6<br>12<br>6<br>12<br>6<br>12<br>6<br>12<br>6<br>12<br>6<br>12<br>6<br>12<br>6<br>12<br>6<br>12<br>6<br>12<br>6<br>12<br>6<br>12<br>6<br>12<br>6<br>12<br>6<br>12<br>6<br>12<br>6<br>12<br>6<br>12<br>6<br>12<br>6<br>12<br>6<br>12<br>6<br>12<br>6<br>12<br>6<br>12<br>6<br>12<br>6<br>12<br>6<br>12<br>6<br>12<br>6<br>12<br>6<br>12<br>6<br>12<br>6<br>12<br>6<br>12<br>6<br>12<br>6<br>12<br>6<br>12<br>6<br>12<br>6<br>12<br>6<br>12<br>6<br>12<br>6<br>12<br>6<br>12<br>6<br>12<br>6<br>12<br>6<br>12<br>6<br>12<br>6<br>12<br>6<br>12<br>12<br>6<br>12<br>12<br>6<br>12<br>12<br>6<br>12<br>12<br>6<br>12<br>12<br>6<br>12<br>12<br>6<br>12<br>12<br>12<br>12<br>12<br>12<br>12<br>12<br>12<br>12 | Villow           40,00           3/           Insu           38           5.1           5.1           1           5.1           1           5.1           1           1.1 <t< th=""><th>able<br/>00* B<br/>78-in.<br/>18-in.<br/>15.2<br/>5.2<br/>5.2<br/>5.2<br/>5.2<br/>5.2<br/>5.2<br/>5.2</th><th>Exp<br/>TUH<br/>n<br/>64<br/>13.7<br/>6.1<br/>3.0<br/>1.5<br/>ated<br/>76<br/>12.2<br/>4.6<br/>1.5<br/>20,000<br/>-in. In<br/>77<br/>0<br/>22<br/>0<br/>16<br/>1.5<br/>1.5<br/>1.5<br/>1.5<br/>1.5<br/>1.5<br/>1.5<br/>1.5</th><th>In:           38           6.1           6.1           6.1           6.1           6.1           6.1           6.1           6.1           6.1           6.1           6.1           6.1           6.1           6.1           7           0           1           10           33           9           8           12</th><th>Ven<br/>1/2-ir<br/>sulat<br/>51<br/>18.3<br/>9.1<br/>4.6<br/>102<br/>9.1<br/>1.5<br/>02<br/>0.7<br/>3.0<br/>H<br/>on 1<br/>02<br/>3.7</th><th>t Lengt<br/>ion<br/>64<br/>15.2<br/>7.6<br/>4.6<br/>3.0<br/>38<br/>4.6<br/>4.6<br/>4.6<br/>4.6<br/>4.6<br/>4.6<br/>4.6<br/>4.6<br/>4.6<br/>4.6</th><th>th in U<br/>38<br/>6.1<br/>4.6<br/>3.0<br/>1.5<br/>8<br/>3/8<br/>51<br/>15.2<br/>10.7<br/>7.6<br/>10.7<br/>7.6<br/>10.7<br/>7.6<br/>10.7<br/>7.6<br/>10.7<br/>7.6<br/>10.7<br/>7.6<br/>10.7<br/>7.6<br/>10.7<br/>7.6<br/>10.7<br/>7.6<br/>10.7<br/>7.6<br/>10.7<br/>7.6<br/>10.7<br/>7.6<br/>10.7<br/>7.6<br/>10.7<br/>7.6<br/>10.7<br/>7.6<br/>10.7<br/>7.6<br/>10.7<br/>7.6<br/>10.7<br/>7.6<br/>10.7<br/>7.6<br/>10.7<br/>7.6<br/>10.7<br/>7.6<br/>10.7<br/>7.6<br/>10.7<br/>7.6<br/>10.7<br/>7.6<br/>10.7<br/>7.6<br/>10.7<br/>7.6<br/>10.7<br/>7.6<br/>10.7<br/>7.6<br/>10.7<br/>7.6<br/>10.7<br/>7.6<br/>10.7<br/>7.6<br/>10.7<br/>7.6<br/>10.7<br/>7.6<br/>10.7<br/>7.6<br/>10.7<br/>7.6<br/>10.7<br/>7.6<br/>10.7<br/>7.6<br/>10.7<br/>7.6<br/>10.7<br/>7.6<br/>10.7<br/>7.6<br/>10.7<br/>7.6<br/>10.7<br/>7.6<br/>10.7<br/>7.6<br/>10.7<br/>7.6<br/>10.7<br/>7.6<br/>10.7<br/>7.6<br/>10.7<br/>7.6<br/>10.7<br/>7.6<br/>10.7<br/>7.6<br/>10.7<br/>7.6<br/>10.7<br/>7.6<br/>10.7<br/>7.6<br/>10.7<br/>7.6<br/>10.7<br/>7.6<br/>10.7<br/>7.6<br/>10.7<br/>7.6<br/>10.7<br/>7.6<br/>10.7<br/>7.6<br/>10.7<br/>7.6<br/>10.7<br/>7.6<br/>10.7<br/>7.6<br/>10.7<br/>7.6<br/>10.7<br/>7.6<br/>10.7<br/>7.6<br/>10.7<br/>7.6<br/>10.7<br/>7.6<br/>10.7<br/>7.6<br/>10.7<br/>7.6<br/>10.7<br/>7.6<br/>10.7<br/>7.6<br/>10.7<br/>7.6<br/>10.7<br/>7.6<br/>10.7<br/>7.6<br/>10.7<br/>7.6<br/>10.7<br/>7.6<br/>10.7<br/>7.6<br/>10.7<br/>7.6<br/>10.7<br/>7.6<br/>10.7<br/>7.6<br/>10.7<br/>7.6<br/>10.7<br/>7.6<br/>10.7<br/>7.6<br/>10.7<br/>7.6<br/>10.7<br/>7.6<br/>10.7<br/>7.6<br/>10.7<br/>10.7<br/>10.7<br/>10.7<br/>10.7<br/>10.7<br/>10.7<br/>10.7<br/>10.7<br/>10.7<br/>10.7<br/>10.7<br/>10.7<br/>10.7<br/>10.7<br/>10.7<br/>10.7<br/>10.7<br/>10.7<br/>10.7<br/>10.7<br/>10.7<br/>10.7<br/>10.7<br/>10.7<br/>10.7<br/>10.7<br/>10.7<br/>10.7<br/>10.7<br/>10.7<br/>10.7<br/>10.7<br/>10.7<br/>10.7<br/>10.7<br/>10.7<br/>10.7<br/>10.7<br/>10.7<br/>10.7<br/>10.7<br/>10.7<br/>10.7<br/>10.7<br/>10.7<br/>10.7<br/>10.7<br/>10.7<br/>10.7<br/>10.7<br/>10.7<br/>10.7<br/>10.7<br/>10.7<br/>10.7<br/>10.7<br/>10.7<br/>10.7<br/>10.7<br/>10.7<br/>10.7<br/>10.7<br/>10.7<br/>10.7<br/>10.7<br/>10.7<br/>10.7<br/>10.7<br/>10.7<br/>10.7<br/>10.7<br/>10.7<br/>10.7<br/>10.7<br/>10.7<br/>10.7<br/>10.7<br/>10.7<br/>10.7<br/>10.7<br/>10.7<br/>10.7<br/>10.7<br/>10.7<br/>10.7<br/>10.7<br/>10.7<br/>10.7<br/>10.7<br/>10.7<br/>10.7<br/>10.7<br/>10.7<br/>10.7<br/>10.7<br/>10.7<br/>10.7<br/>10.7<br/>10.7<br/>10.7<br/>10.7<br/>10.7<br/>10.7<br/>10.7<br/>10.7<br/>10.7<br/>10.7<br/>10.7<br/>10.7<br/>10.7<br/>10.7<br/>10.7<br/>10.7<br/>10.7<br/>10.7<br/>10.7<br/>10.7<br/>10.7<br/>10.7<br/>10.7<br/>10.7<br/>10.7<br/>10.7<br/>10.7<br/>10.7<br/>10.7<br/>10.7<br/>10.7<br/>10.7<br/>10.7<br/>10.7<br/>10.7<br/>10.7<br/>10.7<br/>10.7<br/>10.7<br/>10.7<br/>10.7<br/>10.7<br/>10.7<br/>10.7<br/>10.7<br/>10.7<br/>10.7<br/>10.7<br/>10.7<br/>10.7<br/>10.7<br/>10.7<br/>10.7<br/>10.7<br/>10.7<br/>10.7<br/>10.7<br/>10.7<br/>10.7<br/>10.7<br/>10.7<br/>10.7<br/>10.7<br/>10.7<br/>10.7<br/>10.7<br/>10.7<br/>10.7<br/>10.7<br/>10.7<br/>10.7<br/>10.7<br/>10.7<br/>10.7<br/>10.7<br/>10.7<br/>10.7<br/>10.7<br/>10.7</th><th>Inin           9.1           4.6           1.5           0,000           -in.           3.4           4.4           5.8           0.7           6           0.7           6           0.7           6           0.7           6           0.7           6           0.7           6           0.7</th><th>Sulate           64           9.1           3.00           5           00 BTI           Insula           64           27.4           13.7           9.1           6.1           00 BTI           Insula           27.4           13.7           9.1           6.1           00 BTI           Insula           2           1           0      <t< th=""><th>oned           76           7.6           3.0           JH           ttion           76           22.9           10.7           6.1           4.6           UH           ttion           76           8.9           3.7           0.1           5.1           Ininsu           76           16.1</th><th>Space           3/8           38           6.1           6.1           6.1           6.1           6.1           6.1           10.1           9.1           9.1           9.1           9.1      
    9.1           10.1           10.1           10.1           10.2           11.5     </th></t<><th>e - M<br/>60,000<br/>-in. In<br/>51<br/>22.9<br/>12.2<br/>7.6<br/>4.6<br/>2<br/>2<br/>3<br/>4<br/>4<br/>5<br/>4<br/>6<br/>4<br/>6<br/>4<br/>6<br/>4<br/>6<br/>4<br/>6<br/>4<br/>6<br/>4<br/>6<br/>4<br/>6<br/>4<br/>6<br/>4<br/>6<br/>4<br/>6<br/>4<br/>6<br/>6<br/>7<br/>6<br/>7<br/>6<br/>7<br/>6<br/>7<br/>6<br/>7<br/>6<br/>7<br/>6<br/>7<br/>6<br/>7<br/>7<br/>6<br/>7<br/>7<br/>6<br/>7<br/>7<br/>6<br/>7<br/>7<br/>6<br/>7<br/>7<br/>6<br/>7<br/>7<br/>6<br/>7<br/>7<br/>6<br/>7<br/>7<br/>6<br/>7<br/>7<br/>7<br/>6<br/>7<br/>7<br/>7<br/>7<br/>7<br/>7<br/>7<br/>7<br/>7<br/>7<br/>7<br/>7<br/>7</th><th>eter<br/>0 BT<br/>sula<br/>64<br/>19.8<br/>9.1<br/>6.1<br/>6.1<br/>6.1<br/>6.1<br/>6.1<br/>6.1<br/>6.1<br/>6.1<br/>6.1<br/>6</th><th>S<br/>UH<br/>tion<br/>7 (6<br/>18.2<br/>7.(<br/>4.(<br/>3.(<br/>1/)<br/>51<br/>15.<br/>15.<br/>15.<br/>15.<br/>12.<br/>9.<br/>10.<br/>10.<br/>10.<br/>10.<br/>10.<br/>10.<br/>10.<br/>10</th><th>6 :<br/>.3 ( ( 6<br/>6 ( 7)<br/>0 ( 7)<br/>1 .<br/>2 .<br/>2 .<br/>2 .<br/>1 .<br/>2 .<br/>2 .<br/>2 .<br/>1 .<br/>2 .<br/>2 .<br/>2 .<br/>1 .<br/>2 .<br/>2 .<br/>2 .<br/>2 .<br/>1 .<br/>2 .<br/>2 .<br/>2 .<br/>2 .<br/>2 .<br/>2 .<br/>2 .</th><th>1/2<br/>38<br/>3.1<br/>3.1<br/>3.1<br/>3.1<br/>3.1<br/>4<br/>21.3<br/>15.2<br/>9.1<br/>7.6<br/>9.1<br/>7.6<br/>1<br/>1<br/>1<br/>1<br/>2<br/>1<br/>1<br/>2<br/>1<br/>1<br/>2<br/>1<br/>1<br/>2<br/>1<br/>1<br/>2<br/>1<br/>1<br/>2<br/>1<br/>2<br/>1<br/>2<br/>1<br/>2<br/>1<br/>2<br/>1<br/>2<br/>1<br/>2<br/>1<br/>2<br/>1<br/>2<br/>1<br/>2<br/>1<br/>2<br/>1<br/>2<br/>1<br/>2<br/>1<br/>2<br/>1<br/>2<br/>1<br/>2<br/>1<br/>2<br/>1<br/>2<br/>1<br/>2<br/>1<br/>2<br/>1<br/>2<br/>1<br/>2<br/>1<br/>2<br/>1<br/>2<br/>1<br/>2<br/>1<br/>2<br/>1<br/>2<br/>1<br/>2<br/>1<br/>2<br/>1<br/>2<br/>1<br/>2<br/>1<br/>2<br/>1<br/>2<br/>1<br/>2<br/>1<br/>2<br/>1<br/>2<br/>1<br/>2<br/>1<br/>2<br/>1<br/>2<br/>1<br/>2<br/>1<br/>2<br/>1<br/>2<br/>1<br/>2<br/>2<br/>1<br/>2<br/>2<br/>2<br/>1<br/>2<br/>2<br/>2<br/>1<br/>2<br/>2<br/>2<br/>2<br/>2<br/>2<br/>2<br/>2<br/>2<br/>2<br/>2<br/>2<br/>2</th><th>-in. Ir<br/>51<br/>25.9<br/>13.7<br/>9.1<br/>6.1<br/>Jlatic<br/>76<br/>32.0<br/>16.7<br/>7.6<br/>32.0<br/>16.7<br/>7.6<br/>4<br/>1.5<br/>1.5</th><th>nsulat           64           22.9           7.6           4.6           7.6           1.3           2.2           7.6           3.1           0           .      <tr< th=""><th>ion<br/>19.8<br/>9.1<br/>6.1<br/>3.0<br/>102<br/>21.3<br/>10.7<br/>4.6<br/>3.0<br/>102<br/>27.4<br/>13.7<br/>7.6<br/>4.6<br/>102<br/>27.4<br/>13.7<br/>7.6<br/>4.6<br/>102<br/>23.1<br/>18.3</th></tr<></th></th></t<> | able<br>00* B<br>78-in.<br>18-in.<br>15.2<br>5.2<br>5.2<br>5.2<br>5.2<br>5.2<br>5.2<br>5.2  | Exp<br>TUH<br>n<br>64<br>13.7<br>6.1<br>3.0<br>1.5<br>ated<br>76<br>12.2<br>4.6<br>1.5<br>20,000<br>-in. In<br>77<br>0<br>22<br>0<br>16<br>1.5<br>1.5<br>1.5<br>1.5<br>1.5<br>1.5<br>1.5<br>1.5  | In:           38           6.1           6.1           6.1           6.1           6.1           6.1           6.1           6.1           6.1           6.1           6.1           6.1           6.1           6.1           7           0           1           10           33           9           8           12   
  | Ven<br>1/2-ir<br>sulat<br>51<br>18.3<br>9.1<br>4.6<br>102<br>9.1<br>1.5<br>02<br>0.7<br>3.0<br>H<br>on 1<br>02<br>3.7  | t Lengt<br>ion<br>64<br>15.2<br>7.6<br>4.6<br>3.0<br>38<br>4.6<br>4.6<br>4.6<br>4.6<br>4.6<br>4.6<br>4.6<br>4.6<br>4.6<br>4.6                     | th in U<br>38<br>6.1<br>4.6<br>3.0<br>1.5<br>8<br>3/8<br>51<br>15.2<br>10.7<br>7.6<br>10.7<br>7.6<br>10.7<br>7.6<br>10.7<br>7.6<br>10.7<br>7.6<br>10.7<br>7.6<br>10.7<br>7.6<br>10.7<br>7.6<br>10.7<br>7.6<br>10.7<br>7.6<br>10.7<br>7.6<br>10.7<br>7.6<br>10.7<br>7.6<br>10.7<br>7.6<br>10.7<br>7.6<br>10.7<br>7.6<br>10.7<br>7.6<br>10.7<br>7.6<br>10.7<br>7.6<br>10.7<br>7.6<br>10.7<br>7.6<br>10.7<br>7.6<br>10.7<br>7.6<br>10.7<br>7.6<br>10.7<br>7.6<br>10.7<br>7.6<br>10.7<br>7.6<br>10.7<br>7.6<br>10.7<br>7.6<br>10.7<br>7.6<br>10.7<br>7.6<br>10.7<br>7.6<br>10.7<br>7.6<br>10.7<br>7.6<br>10.7<br>7.6<br>10.7<br>7.6<br>10.7<br>7.6<br>10.7<br>7.6<br>10.7<br>7.6<br>10.7<br>7.6<br>10.7<br>7.6<br>10.7<br>7.6<br>10.7<br>7.6<br>10.7<br>7.6<br>10.7<br>7.6<br>10.7<br>7.6<br>10.7<br>7.6<br>10.7<br>7.6<br>10.7<br>7.6<br>10.7<br>7.6<br>10.7<br>7.6<br>10.7<br>7.6<br>10.7<br>7.6<br>10.7<br>7.6<br>10.7<br>7.6<br>10.7<br>7.6<br>10.7<br>7.6<br>10.7<br>7.6<br>10.7<br>7.6<br>10.7<br>7.6<br>10.7<br>7.6<br>10.7<br>7.6<br>10.7<br>7.6<br>10.7<br>7.6<br>10.7<br>7.6<br>10.7<br>7.6<br>10.7<br>7.6<br>10.7<br>7.6<br>10.7<br>7.6<br>10.7<br>7.6<br>10.7<br>7.6<br>10.7<br>7.6<br>10.7<br>7.6<br>10.7<br>7.6<br>10.7<br>7.6<br>10.7<br>7.6<br>10.7<br>7.6<br>10.7<br>7.6<br>10.7<br>7.6<br>10.7<br>7.6<br>10.7<br>7.6<br>10.7<br>7.6<br>10.7<br>7.6<br>10.7<br>7.6<br>10.7<br>7.6<br>10.7<br>10.7<br>10.7<br>10.7<br>10.7<br>10.7<br>10.7<br>10.7<br>10.7<br>10.7<br>10.7<br>10.7<br>10.7<br>10.7<br>10.7<br>10.7<br>10.7<br>10.7<br>10.7<br>10.7<br>10.7<br>10.7<br>10.7<br>10.7<br>10.7<br>10.7<br>10.7<br>10.7<br>10.7<br>10.7<br>10.7<br>10.7<br>10.7<br>10.7<br>10.7<br>10.7<br>10.7<br>10.7<br>10.7<br>10.7<br>10.7<br>10.7<br>10.7<br>10.7<br>10.7<br>10.7<br>10.7<br>10.7<br>10.7<br>10.7<br>10.7<br>10.7<br>10.7<br>10.7<br>10.7<br>10.7<br>10.7<br>10.7<br>10.7<br>10.7<br>10.7<br>10.7<br>10.7<br>10.7<br>10.7<br>10.7<br>10.7<br>10.7<br>10.7<br>10.7<br>10.7<br>10.7<br>10.7<br>10.7<br>10.7<br>10.7<br>10.7<br>10.7<br>10.7<br>10.7<br>10.7<br>10.7<br>10.7<br>10.7<br>10.7<br>10.7<br>10.7<br>10.7<br>10.7<br>10.7<br>10.7<br>10.7<br>10.7<br>10.7<br>10.7<br>10.7<br>10.7<br>10.7<br>10.7<br>10.7<br>10.7<br>10.7<br>10.7<br>10.7<br>10.7<br>10.7<br>10.7<br>10.7<br>10.7<br>10.7<br>10.7<br>10.7<br>10.7<br>10.7<br>10.7<br>10.7<br>10.7<br>10.7<br>10.7<br>10.7<br>10.7<br>10.7<br>10.7<br>10.7<br>10.7<br>10.7<br>10.7<br>10.7<br>10.7<br>10.7<br>10.7<br>10.7<br>10.7<br>10.7<br>10.7<br>10.7<br>10.7<br>10.7<br>10.7<br>10.7<br>10.7<br>10.7<br>10.7<br>10.7<br>10.7<br>10.7<br>10.7<br>10.7<br>10.7<br>10.7<br>10.7<br>10.7<br>10.7<br>10.7<br>10.7<br>10.7<br>10.7<br>10.7<br>10.7<br>10.7<br>10.7<br>10.7<br>10.7<br>10.7<br>10.7<br>10.7<br>10.7<br>10.7<br>10.7<br>10.7<br>10.7<br>10.7<br>10.7<br>10.7<br>10.7<br>10.7<br>10.7 | Inin           9.1           4.6           1.5           0,000           -in.           3.4           4.4           5.8           0.7           6           0.7           6           0.7           6           0.7           6           0.7           6           0.7           6           0.7  | Sulate           64           9.1           3.00           5           00 BTI           Insula           64           27.4           13.7           9.1           6.1           00 BTI           Insula           27.4           13.7           9.1           6.1           00 BTI           Insula           2           1           0 <t< th=""><th>oned           76           7.6           3.0           JH           ttion           76           22.9           10.7           6.1           4.6           UH           ttion           76           8.9           3.7           0.1           5.1           Ininsu           76           16.1</th><th>Space           3/8           38           6.1           6.1           6.1           6.1           6.1           6.1           10.1           9.1           10.1           10.1           10.1           10.2           11.5     </th></t<> <th>e - M<br/>60,000<br/>-in. In<br/>51<br/>22.9<br/>12.2<br/>7.6<br/>4.6<br/>2<br/>2<br/>3<br/>4<br/>4<br/>5<br/>4<br/>6<br/>4<br/>6<br/>4<br/>6<br/>4<br/>6<br/>4<br/>6<br/>4<br/>6<br/>4<br/>6<br/>4<br/>6<br/>4<br/>6<br/>4<br/>6<br/>4<br/>6<br/>4<br/>6<br/>6<br/>7<br/>6<br/>7<br/>6<br/>7<br/>6<br/>7<br/>6<br/>7<br/>6<br/>7<br/>6<br/>7<br/>6<br/>7<br/>7<br/>6<br/>7<br/>7<br/>6<br/>7<br/>7<br/>6<br/>7<br/>7<br/>6<br/>7<br/>7<br/>6<br/>7<br/>7<br/>6<br/>7<br/>7<br/>6<br/>7<br/>7<br/>6<br/>7<br/>7<br/>7<br/>6<br/>7<br/>7<br/>7<br/>7<br/>7<br/>7<br/>7<br/>7<br/>7<br/>7<br/>7<br/>7<br/>7</th> <th>eter<br/>0 BT<br/>sula<br/>64<br/>19.8<br/>9.1<br/>6.1<br/>6.1<br/>6.1<br/>6.1<br/>6.1<br/>6.1<br/>6.1<br/>6.1<br/>6.1<br/>6</th> <th>S<br/>UH<br/>tion<br/>7 (6<br/>18.2<br/>7.(<br/>4.(<br/>3.(<br/>1/)<br/>51<br/>15.<br/>15.<br/>15.<br/>15.<br/>12.<br/>9.<br/>10.<br/>10.<br/>10.<br/>10.<br/>10.<br/>10.<br/>10.<br/>10</th> <th>6 :<br/>.3 ( ( 6<br/>6 ( 7)<br/>0 ( 7)<br/>1 .<br/>2 .<br/>2 .<br/>2 .<br/>1 .<br/>2 .<br/>2 .<br/>2 .<br/>1 .<br/>2 .<br/>2 .<br/>2 .<br/>1 .<br/>2 .<br/>2 .<br/>2 .<br/>2 .<br/>1 .<br/>2 .<br/>2 .<br/>2 .<br/>2 .<br/>2 .<br/>2 .<br/>2 .</th>
<th>1/2<br/>38<br/>3.1<br/>3.1<br/>3.1<br/>3.1<br/>3.1<br/>4<br/>21.3<br/>15.2<br/>9.1<br/>7.6<br/>9.1<br/>7.6<br/>1<br/>1<br/>1<br/>1<br/>2<br/>1<br/>1<br/>2<br/>1<br/>1<br/>2<br/>1<br/>1<br/>2<br/>1<br/>1<br/>2<br/>1<br/>1<br/>2<br/>1<br/>2<br/>1<br/>2<br/>1<br/>2<br/>1<br/>2<br/>1<br/>2<br/>1<br/>2<br/>1<br/>2<br/>1<br/>2<br/>1<br/>2<br/>1<br/>2<br/>1<br/>2<br/>1<br/>2<br/>1<br/>2<br/>1<br/>2<br/>1<br/>2<br/>1<br/>2<br/>1<br/>2<br/>1<br/>2<br/>1<br/>2<br/>1<br/>2<br/>1<br/>2<br/>1<br/>2<br/>1<br/>2<br/>1<br/>2<br/>1<br/>2<br/>1<br/>2<br/>1<br/>2<br/>1<br/>2<br/>1<br/>2<br/>1<br/>2<br/>1<br/>2<br/>1<br/>2<br/>1<br/>2<br/>1<br/>2<br/>1<br/>2<br/>1<br/>2<br/>1<br/>2<br/>1<br/>2<br/>1<br/>2<br/>1<br/>2<br/>1<br/>2<br/>1<br/>2<br/>2<br/>1<br/>2<br/>2<br/>2<br/>1<br/>2<br/>2<br/>2<br/>1<br/>2<br/>2<br/>2<br/>2<br/>2<br/>2<br/>2<br/>2<br/>2<br/>2<br/>2<br/>2<br/>2</th> <th>-in. Ir<br/>51<br/>25.9<br/>13.7<br/>9.1<br/>6.1<br/>Jlatic<br/>76<br/>32.0<br/>16.7<br/>7.6<br/>32.0<br/>16.7<br/>7.6<br/>4<br/>1.5<br/>1.5</th> <th>nsulat           64           22.9           7.6           4.6           7.6           1.3           2.2           7.6           3.1           0           .      <tr< th=""><th>ion<br/>19.8<br/>9.1<br/>6.1<br/>3.0<br/>102<br/>21.3<br/>10.7<br/>4.6<br/>3.0<br/>102<br/>27.4<br/>13.7<br/>7.6<br/>4.6<br/>102<br/>27.4<br/>13.7<br/>7.6<br/>4.6<br/>102<br/>23.1<br/>18.3</th></tr<></th>   | oned           76           7.6           3.0           JH           ttion           76           22.9           10.7           6.1           4.6           UH           ttion           76           8.9           3.7           0.1           5.1           Ininsu           76           16.1   | Space           3/8           38           6.1           6.1           6.1           6.1           6.1           6.1           10.1           9.1           10.1           10.1           10.1           10.2           11.5   | e - M<br>60,000<br>-in. In<br>51<br>22.9<br>12.2<br>7.6<br>4.6<br>2<br>2<br>3<br>4<br>4<br>5<br>4<br>6<br>4<br>6<br>4<br>6<br>4<br>6<br>4<br>6<br>4<br>6<br>4<br>6<br>4<br>6<br>4<br>6<br>4<br>6<br>4<br>6<br>4<br>6<br>6<br>7<br>6<br>7<br>6<br>7<br>6<br>7<br>6<br>7<br>6<br>7<br>6<br>7<br>6<br>7<br>7<br>6<br>7<br>7<br>6<br>7<br>7<br>6<br>7<br>7<br>6<br>7<br>7<br>6<br>7<br>7<br>6<br>7<br>7<br>6<br>7<br>7<br>6<br>7<br>7<br>7<br>6<br>7<br>7<br>7<br>7<br>7<br>7<br>7<br>7<br>7<br>7<br>7<br>7<br>7   | eter<br>0 BT<br>sula<br>64<br>19.8<br>9.1<br>6.1<br>6.1<br>6.1<br>6.1<br>6.1<br>6.1<br>6.1<br>6.1<br>6.1<br>6                      | S<br>UH<br>tion<br>7 (6<br>18.2<br>7.(<br>4.(<br>3.(<br>1/)<br>51<br>15.<br>15.<br>15.<br>15.<br>12.<br>9.<br>10.<br>10.<br>10.<br>10.<br>10.<br>10.<br>10.<br>10  
   | 6 :<br>.3 ( ( 6<br>6 ( 7)<br>0 ( 7)<br>1 .<br>2 .<br>2 .<br>2 .<br>1 .<br>2 .<br>2 .<br>2 .<br>1 .<br>2 .<br>2 .<br>2 .<br>1 .<br>2 .<br>2 .<br>2 .<br>2 .<br>1 .<br>2 .<br>2 .<br>2 .<br>2 .<br>2 .<br>2 .<br>2 .  | 1/2<br>38<br>3.1<br>3.1<br>3.1<br>3.1<br>3.1<br>4<br>21.3<br>15.2<br>9.1<br>7.6<br>9.1<br>7.6<br>1<br>1<br>1<br>1<br>2<br>1<br>1<br>2<br>1<br>1<br>2<br>1<br>1<br>2<br>1<br>1<br>2<br>1<br>1<br>2<br>1<br>2<br>1<br>2<br>1<br>2<br>1<br>2<br>1<br>2<br>1<br>2<br>1<br>2<br>1<br>2<br>1<br>2<br>1<br>2<br>1<br>2<br>1<br>2<br>1<br>2<br>1<br>2<br>1<br>2<br>1<br>2<br>1<br>2<br>1<br>2<br>1<br>2<br>1<br>2<br>1<br>2<br>1<br>2<br>1<br>2<br>1<br>2<br>1<br>2<br>1<br>2<br>1<br>2<br>1<br>2<br>1<br>2<br>1<br>2<br>1<br>2<br>1<br>2<br>1<br>2<br>1<br>2<br>1<br>2<br>1<br>2<br>1<br>2<br>1<br>2<br>1<br>2<br>1<br>2<br>1<br>2<br>1<br>2<br>2<br>1<br>2<br>2<br>2<br>1<br>2<br>2<br>2<br>1<br>2<br>2<br>2<br>2<br>2<br>2<br>2<br>2<br>2<br>2<br>2<br>2<br>2   | -in. Ir<br>51<br>25.9<br>13.7<br>9.1<br>6.1<br>Jlatic<br>76<br>32.0<br>16.7<br>7.6<br>32.0<br>16.7<br>7.6<br>4<br>1.5<br>1.5   | nsulat           64           22.9           7.6           4.6           7.6           1.3           2.2           7.6           3.1           0           . <tr< th=""><th>ion<br/>19.8<br/>9.1<br/>6.1<br/>3.0<br/>102<br/>21.3<br/>10.7<br/>4.6<br/>3.0<br/>102<br/>27.4<br/>13.7<br/>7.6<br/>4.6<br/>102<br/>27.4<br/>13.7<br/>7.6<br/>4.6<br/>102<br/>23.1<br/>18.3</th></tr<> | ion<br>19.8<br>9.1<br>6.1<br>3.0<br>102<br>21.3<br>10.7<br>4.6<br>3.0<br>102<br>27.4<br>13.7<br>7.6<br>4.6<br>102<br>27.4<br>13.7<br>7.6<br>4.6<br>102<br>23.1<br>18.3  
  |
| Winter<br>Design<br>Temp °C<br>Winter<br>Design<br>Temp °C<br>Winter<br>Design<br>Temp °C | Unit<br>Size<br>Pipe<br>Dia. mm<br>-7<br>-18<br>-29<br>-40<br>Unit Si<br>Pipe Dia.<br>-7<br>-18<br>-29<br>-40<br>Unit Si<br>Pipe Dia.<br>-7<br>-18<br>-29<br>-40<br>Unit Si<br>Pipe Dia.<br>-7<br>-18<br>-29<br>-40 | Unii           38           6.1           3.0           1.5           ze           mm           ze           mm           ze  | Maxim<br>nsulat<br>51<br>6.1<br>1.5<br>38<br>4.6<br>4.6<br>4.6<br>4.6<br>5.7<br>6.<br>6.<br>4.6<br>4.6<br>4.6<br>4.6<br>4.6<br>4.6  | ed<br>64<br>64<br>63<br>64<br>63<br>64<br>64<br>64<br>64<br>64<br>64<br>64<br>64<br>64<br>64   | Vilow           40,00           3/           Inst           38           3.1           3.1           3.1           1           3.1           1           3.1           1           1.1           2.2           .1           0           .5           Unit           64           15.2           6.1           3.0           1.5  | able<br>00* B<br>78-in.<br>ulatic<br>51<br>5.2<br>7.6<br>4.6<br>3.0<br>7.6<br>4.6<br>12.2<br>4.6<br>1.5<br>1.5<br>1.5<br>1.5<br>1.5<br>1.5<br>1.5<br>1.5  | Exp<br>TUH<br>n<br>64<br>13.7<br>6.1<br>3.0<br>1.5<br>ated<br>7<br>10<br>3.0<br>1.5<br>4.6<br>1.5<br>20,000<br>-in. In<br>7<br>0<br>22,000<br>-in. In<br>7<br>0<br>20,000<br>-in. In<br>7<br>0<br>20,000<br>-in. In<br>7<br>0<br>1.5<br>-in. In<br>7<br>0<br>1.5<br>-in. In<br>1.5<br>-in. In<br>1               | In           38           6.1           6.1           6.1           6.1           6.1           6.1           6.1           6           7           0           1           10           5           8           7           7           7   | Ven<br>1/2-ir<br>sulat<br>51<br>18.3<br>9.1<br>4.6<br>102<br>9.1<br>1.5<br>02<br>0.7<br>3.0<br>H<br>02<br>0.7<br>3.0<br>H<br>02<br>0.7<br>6.0<br>102<br>0.7<br>0.0<br>0.7<br>0.0<br>0.0<br>0.0<br>0.0<br>0.0 | t Lengt<br>ion<br>64<br>15.2<br>7.6<br>4.6<br>3.0<br>38<br>4.6<br>4.6<br>4.6<br>4.6<br>4.6<br>4.6<br>4.6<br>4.6<br>4.6<br>4.6                     | th in U<br>38<br>6.1<br>4.6<br>3.0<br>1.5<br>8<br>3/8<br>51<br>15.2<br>15.2<br>10.7<br>7.6<br>10.7<br>7.6<br>10.7<br>7.6<br>10.7<br>7.6<br>10.7<br>7.6<br>10.7<br>7.6<br>10.7<br>7.6<br>10.7<br>7.6<br>10.7<br>7.6<br>10.7<br>7.6<br>10.7<br>7.6<br>10.7<br>7.6<br>10.7<br>7.6<br>10.7<br>7.6<br>10.7<br>7.6<br>10.7<br>7.6<br>10.7<br>7.6<br>10.7<br>7.6<br>10.7<br>7.6<br>10.7<br>7.6<br>10.7<br>7.6<br>10.7<br>7.6<br>10.7<br>7.6<br>10.7<br>7.6<br>10.7<br>7.6<br>10.7<br>7.6<br>10.7<br>7.6<br>10.7<br>7.6<br>10.7<br>7.6<br>10.7<br>7.6<br>10.7<br>7.6<br>10.7<br>7.6<br>10.7<br>7.6<br>10.7<br>7.6<br>10.7<br>7.6<br>10.7<br>7.6<br>10.7<br>7.6<br>10.7<br>7.6<br>10.7<br>7.6<br>10.7<br>7.6<br>10.7<br>7.6<br>10.7<br>7.6<br>10.7<br>7.6<br>10.7<br>7.6<br>10.7<br>7.6<br>10.7<br>7.6<br>10.7<br>7.6<br>10.7<br>7.6<br>10.7<br>7.6<br>10.7<br>7.6<br>10.7<br>7.6<br>10.7<br>7.6<br>10.7<br>7.6<br>10.7<br>7.6<br>10.7<br>7.6<br>10.7<br>7.6<br>10.7<br>7.6<br>10.7<br>7.6<br>10.7<br>7.6<br>10.7<br>7.6<br>10.7<br>7.6<br>10.7<br>7.6<br>10.7<br>7.6<br>10.7<br>7.6<br>10.7<br>7.6<br>10.7<br>7.6<br>10.7<br>7.6<br>10.7<br>7.6<br>10.7<br>7.6<br>10.7<br>7.6<br>10.7<br>7.6<br>10.7<br>7.7<br>10.7<br>7.6<br>10.7<br>7.6<br>10.7<br>7.7<br>10.7<br>7.7<br>10.7<br>7.6<br>10.7<br>7.7<br>10.7<br>7.7<br>10.7<br>7.7<br>10.7<br>7.7<br>10.7<br>7.7<br>10.7<br>10.7<br>10.7<br>10.7<br>10.7<br>10.7<br>10.7<br>10.7<br>10.7<br>10.7<br>10.7<br>10.7<br>10.7<br>10.7<br>10.7<br>10.7<br>10.7<br>10.7<br>10.7<br>10.7<br>10.7<br>10.7<br>10.7<br>10.7<br>10.7<br>10.7<br>10.7<br>10.7<br>10.7<br>10.7<br>10.7<br>10.7<br>10.7<br>10.7<br>10.7<br>10.7<br>10.7<br>10.7<br>10.7<br>10.7<br>10.7<br>10.7<br>10.7<br>10.7<br>10.7<br>10.7<br>10.7<br>10.7<br>10.7<br>10.7<br>10.7<br>10.7<br>10.7<br>10.7<br>10.7<br>10.7<br>10.7<br>10.7<br>10.7<br>10.7<br>10.7<br>10.7<br>10.7<br>10.7<br>10.7<br>10.7<br>10.7<br>10.7<br>10.7<br>10.7<br>10.7<br>10.7<br>10.7<br>10.7<br>10.7<br>10.7<br>10.7<br>10.7<br>10.7<br>10.7<br>10.7<br>10.7<br>10.7<br>10.7<br>10.7<br>10.7<br>10.7<br>10.7<br>10.7<br>10.7<br>10.7<br>10.7<br>10.7<br>10.7<br>10.7<br>10.7<br>10.7<br>10.7<br>10.7<br>10.7<br>10.7<br>10.7<br>10.7<br>10.7<br>10.7<br>10.7<br>10.7<br>10.7<br>10.7<br>10.7<br>10.7<br>10.7<br>10.7<br>10.7<br>10.7<br>10.7<br>10.7<br>10.7<br>10.7<br>10.7<br>10.7<br>10.7<br>10.7<br>10.7<br>10.7<br>10.7<br>10.7<br>10.7<br>10.7<br>10.7<br>10.7<br>10.7<br>10.7<br>10.7<br>10.7<br>10.7<br>10.7<br>10.7<br>10.7<br>10.7<br>10.7<br>10.7<br>10.7<br>10.7<br>10.7<br>10.7<br>10.7<br>10.7<br>10.7<br>10.7<br>10.7<br>10.7<br>10.7<br>10.7<br>10.7<br>10.7<br>10.7<br>10.7<br>10.7<br>10.7<br>10.7<br>10.7<br>10.7<br>10.7<br>10.7<br>10.7<br>10.7<br>10.7<br>10.7<br>10.7<br>10.7<br>10.7<br>10.7<br>10.7<br>10.7<br>10.7<br>10.7<br>10.7<br>10.7<br>10.7<br>10.7<br>1 | Inin           51           9.1           4.6           0.000           -in.           0.000           -in.           0.000           -in.           0.000           -in.           0.000           -in.           0.000           -in.           0.000           0.000           0.000           0.000           0.000           0.000           0.000           0.000           0.0000           0.000   | Sulate           64           9.1           3.00           5           00 BTI           Insula           64           27.4           13.7           9.1           6.1           00 BTI           Insula           22           1           1           2           1           1           2           1           2           1           2           1           2           1           2           1           2           1           2           1           2           1           5           1           5           1           5  | oned           76           7.6           3.0           JH           ttion           76           22.9           10.7           6.1           4.6           UH           ttion           76           8.9           3.7           0.1           5.1           Ininsu           76           16.1           7.6           3.7           0.1           5.1 | Space           3/8           38           6.1           6.1           6.1           6.1           6.1           6.1           10.1           19.1           9.1           4.6           1.5           102           24.4           10.7           6.1           3.0           lated           10.7           6.1           3.0  | e - M<br>60,000<br>-in. In<br>51<br>22.9<br>12.2<br>7.6<br>4.6<br>2<br>2<br>3<br>4<br>4<br>5<br>4<br>6<br>4<br>6<br>4<br>6<br>4<br>6<br>4<br>6<br>4<br>6<br>4<br>6<br>4<br>6<br>4<br>6<br>4<br>6<br>4<br>6<br>6<br>7<br>6<br>7<br>6<br>7<br>6<br>7<br>6<br>7<br>6<br>7<br>6<br>7<br>6<br>7<br>6<br>7<br>6<br>7<br>6<br>7<br>6<br>7<br>6<br>7<br>6<br>7<br>6<br>7<br>6<br>7<br>6<br>7<br>6<br>7<br>6<br>7<br>6<br>7<br>6<br>7<br>7<br>6<br>7<br>6<br>7<br>7<br>6<br>7<br>7<br>6<br>7<br>7<br>6<br>7<br>7<br>6<br>7<br>7<br>6<br>7<br>7<br>7<br>6<br>7<br>7<br>7<br>7<br>7<br>6<br>7<br>7<br>7<br>7<br>7<br>7<br>7<br>7<br>7<br>7<br>7<br>7<br>7 | eter<br>0 BT<br>sula<br>64<br>19.8<br>9.1<br>6.1<br>4.6<br>5<br>6.1<br>6.1<br>6.1<br>6.1<br>6.1<br>6.1<br>6.1<br>6.1<br>6.1<br>6.1 | S<br>UH<br>tion<br>76<br>18.<br>7.6<br>18.<br>7.6<br>4.0<br>3.0<br>10<br>51<br>15.<br>15.<br>15.<br>15.<br>15.<br>12.<br>9.<br>10<br>10<br>8.<br>19.8<br>19.8<br>19.8<br>19.8<br>19.8<br>19.8<br>19.8<br>19.8<br>19.8<br>19.8<br>19.8<br>19.8<br>19.8<br>19.8<br>19.8<br>19.8<br>19.8<br>19.8<br>19.8<br>19.8<br>19.8<br>19.8<br>19.8<br>19.8<br>19.8<br>19.8<br>19.8<br>19.8<br>19.8<br>19.8<br>19.8<br>19.8<br>19.8<br>19.8<br>19.8<br>19.8<br>19.8<br>19.8<br>19.8<br>19.8<br>19.8<br>19.8<br>19.8<br>19.8<br>19.8<br>19.8<br>19.8<br>19.8<br>19.8<br>19.8<br>19.8<br>19.8<br>19.8<br>19.8<br>19.8<br>19.8<br>19.8<br>19.8<br>19.8<br>19.8<br>19.8<br>19.8<br>19.8<br>19.8<br>19.8<br>19.8<br>19.8<br>19.8<br>19.8<br>19.8<br>19.8<br>19.8<br>19.8<br>19.8<br>19.8<br>19.8<br>19.8<br>19.8<br>19.8<br>19.8<br>19.8<br>19.8<br>19.8<br>19.8<br>19.8<br>19.8<br>19.8<br>19.8<br>19.8<br>19.8<br>19.8<br>19.8<br>19.8<br>19.8<br>19.8<br>19.8<br>19.8<br>19.8<br>19.8<br>19.8<br>19.8<br>19.8<br>19.8<br>19.8<br>19.8<br>19.8<br>19.8<br>19.8<br>19.8<br>19.8<br>19.8<br>19.8<br>19.8<br>19.8<br>19.8<br>19.8<br>19.8<br>19.8<br>19.8<br>19.8<br>19.8<br>19.8<br>19.8<br>19.8<br>19.8<br>19.8<br>19.8<br>19.8<br>19.8<br>19.8<br>19.8<br>19.8<br>19.8<br>19.8<br>19.8<br>19.8<br>19.8<br>19.8<br>19.8<br>19.8<br>19.8<br>19.8<br>19.8<br>19.8<br>19.8<br>19.8<br>19.8<br>19.8<br>19.8<br>19.8<br>19.8<br>19.8<br>19.8<br>19.8<br>19.8<br>19.8<br>19.8<br>19.8<br>19.8<br>19.8<br>19.8<br>19.8<br>19.8<br>19.8<br>19.8<br>19.8<br>19.8<br>19.8<br>19.7<br>10.8<br>19.8<br>19.8<br>19.8<br>19.8<br>19.7<br>10.8<br>10.8<br>10.8<br>10.8<br>10.8<br>10.8<br>10.8<br>10.8<br>10.8<br>10.8<br>10.8<br>10.8<br>10.8<br>10.8<br>10.8<br>10.8<br>10.8<br>10.8<br>10.8<br>10.8<br>10.8<br>10.8<br>10.8<br>10.8<br>10.8<br>10.8<br>10.8<br>10.8<br>10.8<br>10.8<br>10.8<br>10.8<br>10.8<br>10.8<br>10.8<br>10.8<br>10.8<br>10.8<br>10.8<br>10.8<br>10.8<br>10.8<br>10.8<br>10.8<br>10.8<br>10.8<br>10.8<br>10.8<br>10.8<br>10.8<br>10.8<br>10.8<br>10.8<br>10.8<br>10.8<br>10.8<br>10.8<br>10.8<br>10.8<br>10.8<br>10.8<br>10.8<br>10.8<br>10.8<br>10.8<br>10.8<br>10.8<br>10.8<br>10.8<br>10.8<br>10.8<br>10.8<br>10.8<br>10.8<br>10.8<br>10.8<br>10.8<br>10.8<br>10.8<br>10.8<br>10.8<br>10.8<br>10.8<br>10.8<br>10.8<br>10.8<br>10.8<br>10.8<br>10.8<br>10.8<br>10.8<br>10.8<br>10.8<br>10.8<br>10.8<br>10.8<br>10.8<br>10.8<br>10.8<br>10.8<br>10.8<br>10.8<br>10.8<br>10.8<br>10.8<br>10.8<br>10.8<br>10.8<br>10.8<br>10.8<br>10.8<br>10.8<br>10.8<br>10.8<br>10.8<br>10.8<br>10.8<br>10.8<br>10.8<br>10.8<br>10.8<br>10.8<br>10.8<br>10.8<br>10.8<br>10.8<br>10.8<br>10.8<br>10.8<br>10.8<br>10.8<br>10.8<br>10.8<br>10.8<br>10.8<br>10.8<br>10.8<br>10.8<br>10.8<br>10.8<br>10.8<br>10.8<br>10.8<br>10.8<br>10.8<br>10.8<br>10.8<br>10.8<br>10.8<br>1 | 6         3         6           6         6         6         6           0         6         6         6           1         2         2         1           1         2         2         1           1         2         2         1           1         2         2         1           1         3         2         1           1         3         7         9         1           3         3         1         5         3           1         3         2         1         5           3         1         5         3         1 | 1/2-<br>38<br>3.1<br>3.1<br>3.1<br>3.1<br>3.1<br>3.1<br>3.1<br>3.1   | -in. Ir<br>51<br>25.9<br>13.7<br>9.1<br>6.1<br>Jlatic<br>2<br>10.7<br>76<br>32.0<br>16.7<br>7.6<br>32.0<br>16.7<br>7.6<br>1.5<br>1.5   | 12.2<br>7.6<br>4.6<br>7.6<br>1.3<br>2.2<br>7.6<br>1.3<br>2.2<br>7.6<br>5.1<br>0<br>0<br>0<br>0<br>0<br>0<br>0<br>0<br>0<br>0<br>0<br>0<br>0<br>0<br>0<br>0<br>0<br>0<br>0   | ion<br>19.8<br>9.1<br>6.1<br>3.0<br>102<br>21.3<br>10.7<br>4.6<br>3.0<br>102<br>27.4<br>13.7<br>7.6<br>4.6<br>102<br>38.1<br>18.3<br>12.2  |

Maximum Allowable Exposed Vent Length in Unconditioned Space - Ft.

\* Not all model families have these sizes

#### MAXIMUM EQUIVALENT VENT LENGTH

**NOTE:** Maximum Equivalent Vent Length (MEVL) includes standard and concentric vent termination and does NOT include elbows. Use Deductions from Maximum Equivalent Vent Length to determine allowable vent length for each application.

					Maz	ximum	Equiva	lent Ve	nt Leng	gth -Ft.							
Un	it Size		60,0	000 <sup>1</sup>				80,000				100,	000 <sup>2</sup>			120,000	)
	Pipe Dia. (in)	1½	2	2 ½	3	1½	2	2 ½	3	4	2	2 ½	3	4	2 ½	3	4
	0-2000	50	100	175	200	30	95	130	175	200	45	80	175	200	10	75	185
	2001-3000	45	95	165	185	50		125	165	185	40	75	165	185	10	70	175
	3001-4000	40	90	155	175	25		115	155	175	38	75	155	175	5	65	165
Altitude	4001-4500	35	85	150	170	23	70	110	150	165	36		155	170			160
(feet)	4501-5000	55	80	100	165	22	10	110	145	160	50	70	150	165		60	100
(1001)	5001-6000	37	75	140	155	~~~		100	135	150	33	10	140	155			155
	6001-7000	35	70	130	145	20		90	125	140	31		135	145	N/A	50	140
	7001-8000	32	66	120	135	18	66	00	120	125	29	66	125	135		46	130
	8001-9000	30	62	115	125	17	62	80	110	115	27	62	115	125		43	120
	9001-10000	27	57	105	115	15	57	75	100	105	24	57	100	115		39	115
					Maxin	num Eq	luivaler	nt Vent	Length	- Mete	rs						
Un	it Size		60,0	000 <sup>1</sup>				80,000				100,	000 <sup>2</sup>			120,000	)
	Pipe Dia.	38	51	64	76	38	51	64	76	102	51	64	76	102	64	76	102
	0-610	15.2	30.4	53.3	60.9		28.9	39.6	53.3	60.9	13 7	24.3	53.3	60.9		22.8	56.3
	611-914	13.7	28.9	50.2	56.3	9.1	2010	38.1	50.2	56.3	12.1		50.2	56.3	3.0	21.3	53.3
	915-1219	12.1	27.4	47.2	53.3	7.6		35.0	47.2	53.3	11.5	22.8	47.0	53.3	1.5	19.8	50.2
Altitude	1220-1370	40.0	25.9	45.7	51.8	7.0		00.5	45.7	50.2	10.0		47.2	51.8	-		40 7
(meters)	1371-1524	10.6	24.3	45.7	50.2	0.7	21.3	33.5	44.1	48.7	10.9	01.0	45.7	50.2		18.2	48.7
. ,	1525-1829	11.2	22.8	42.6	47.2	6.7		30.4	41.1	45.7	10.0	21.3	42.6	47.2			47.2
	1830-2134	10.6	21.3	39.6	44.1	6.0		07.4	38.1	42.6	9.4		41.1	44.1	NA	15.2	42.6
	2135-2438	9.7	20.1	36.5	41.1	5.4	20.1	27.4	36.5	38.1	8.8	20.1	38.1	41.1	1	14.0	39.6
	2439-2743	9.1	18.8	35.0	38.1	5.1	18.8	24.3	33.5	35.0	8.2	18.8	35.0	38.1	1	13.1	36.5
	2744-3048	8.2	17.3	32.0	35.0	4.5	17.3	22.8	30.4	32.0	7.3	17.3	30.4	35.0		11.8	35.0

#### Maximum Equivalent Vent Length - Ft.

#### NOTE:

1.Inducer Outlet Restrictor disk (P/N 337683-401; 1.25-in. (32 mm) Dia.) available through Replacement Components required for no greater than 5-ft. (1.5 M) TEVL in downflow and horizontal orientations only. Required for installations from 0-2000 ft. (0 to 610 M) above sea level.

 Inducer Outlet Restrictor disk (P/N 337683-402; 1.50-in. (38 mm) Dia.) available through Replacement Components required for no greater than 5-ft. (1.5 M) TEVL in downflow and horizontal orientations only. Required for installations from 0-2000 ft. (0 to 610 M) above sea level.



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	Dedu	ictions from	n Maximu	m Equivale	ent Vent Le	ength - Ft. (	<b>M</b> )			
Pipe Diameter (in):	1	-1/2		2	2-	1/2		3		4
Mitered 90° Elbow	8	(2.4)	8	(2.4)	8	(2.4)	8	(2.4)	8	(2.4)
Medium Radius 90° Elbow	5	(1.5)	5	(1.5)	5	(1.5)	5	(1.5)	5	(1.5)
Long Radius 90° Elbow	3	(0.9)	3	(0.9)	3	(0.9)	3	(0.9)	3	(0.9)
Mitered 45° Elbow	4	(1.2)	4	(1.2)	4	(1.2)	4	(1.2)	4	(1.2)
Medium Radius 45° Elbow	2.5	(0.8)	2.5	(0.8)	2.5	(0.8)	2.5	(0.8)	2.5	(0.8)
Long Radius 45° Elbow	1.5	(0.5)	1.5	(0.5)	1.5	(0.5)	1.5	(0.5)	1.5	(0.5)
Тее	16	(4.9)	16	(4.9)	16	(4.9)	16	(4.9)	16	(4.9)
Concentric Vent Termination	l	NA	0	(0.0)	١	١A	0	(0.0)	Ν	IA
Standard Vent Termination	0	(0.0)	0	(0.0)	0	(0.0)	0	(0.0)	0	(0.0)

#### NOTES:

1. Use only the smallest diameter pipe possible for venting. Over-sizing may cause flame disturbance or excessive vent terminal icing or freeze-up.

2. NA - Not allowed. Pressure switch will not close, or flame disturbance may result.

3. Vent sizing for Canadian installations over 4500 ft. (1370 M) above sea level are subject to acceptance by the local authorities having jurisdiction.

4. Size both the combustion air and vent pipe independently, then use the larger size for both pipes.

5. Assume the two 45° elbows equal one 90° elbow. Wide radius elbows are desirable and may be required in some cases

- 6. Elbow and pipe sections within the furnace casing and at the vent termination should not be included in vent length or elbow count.
- 7. The minimum pipe length is 5 ft. (2 M) linear feet (meters) for all applications.
- 8. Use 3-in. (76 mm) diameter vent termination kit for installations requiring 4-in. (102 mm) diameter pipe.

9. A running Tee in the Combustion Air Pipe adds 0 ft. to the TEVL of the vent length.

#### **Venting System Length Calculations**

The Total Equivalent Vent Length (TEVL) for EACH combustion air or vent pipe equals the length of the venting system, plus the equivalent length of elbows used in the venting system from Maximum Equivalent Vent Length.

Standard vent terminations or factory accessory concentric vent terminations count for zero deduction.

See vent system manufacturer's data for equivalent lengths of flexible vent pipe or other termination systems. **DO NOT ASSUME** that one foot of flexible vent pipe equals one foot of straight PVC/ABS DWV vent pipe.

Compare the Total Equivalent Vent Length to the Maximum Equivalent Vent Lengths Table.

#### Example 1

A direct-vent 60,000 BTUH furnace installed at 2100 ft. (640M). Venting system includes FOR EACH PIPE:

70 feet (22 M) of vent pipe, 65 feet (20 M) of combustion air inlet pipe, (3) 90° long-radius elbows, (2) 45° long-radius elbows, and a factory accessory concentric vent kit.

Can this application use 2" (50 mm ND) PVC/ABS DWV vent piping?

Measure the required linear length of air inlet and vent					70 ft.	Use length of the longer of the vent
pipe; insert the longest of the two here					(22 M)	or air inlet piping system
Add equiv length of (3) 90° long-radius elbows (use the highest number of elbows for either the vent or inlet pipe)	3	x	3 ft. (0.9 M)	=	9 ft. (2.7 M)	From Deductions from Maximum Equivalent Vent Length
Add equiv length of (2) 45° long-radius elbows (use the highest number of elbows for either the vent or inlet pipe)	2	x	1.5 ft. (0.5 M)	=	3 ft. (0.9 M)	From Deductions from Maximum Equivalent Vent Length
Add equiv length of factory concentric vent term					0 ft.	From Deductions from Maximum Equivalent Vent Length
Add correction for flexible vent pipe, if any					0 ft.	From Vent Manufacturer's instructions; zero for PVC/ABS DWV
Total Equivalent Vent Length (TEVL)					82 ft. (25 M)	Add all of the above lines
Maximum Equivalent Vent Length (MEV/L)					95 ft.	For 2" pipe from Maximum Equivalent Vent
					(29 M)	Length
Is TEVL less than MEVL?					YES	Therefore, 2" pipe MAY be used

#### Example 2

A direct-vent 60,000 BTUH furnace installed at 2100 ft. (640M). Venting system includes FOR EACH PIPE:

100 feet (30 M) of vent pipe, 95 feet (29 M) of combustion air inlet pipe, (3) 90° long-radius elbows, and a polypropylene concentric vent kit. Also includes 20 feet (6.1 M) of flexible polypropylene vent pipe, included within the 100 feet (30 M) of vent pipe.

VERIFY FROM POLYPROPYLENE VENT MANUFACTURER'S INSTRUCTIONS for the multiplier correction for flexible vent pipe.

Can this application use 60mm o.d. (2") polypropylene vent piping? If not, what size piping can be used?

Measure the required linear length of <b>RIGID</b> air in	let and v	ent pipe	insert the		80 ft	Use length of the longer of the vent
longest of the two here: 100 ft. Of rigid pipe	- 20 ft C	)f flexible	nipe	=	(24 M)	or air inlet piping system
Add equiv length of (3) 90° long-radius elbows	2010.0		, bibo		(2 1 11)	
(use the highest number of elbows for either the	3	x	5 ft.	=	15 ft.	
vent or inlet nine)	Ũ	~	(1.5 M)		(4.6 M)	
Add equiv length of 45° long-radius elbows						-
(use the highest number of elbows for either the	0	x		=	0 ft.	Example from polypropylene vent
vent or inlet nine)	Ŭ	~			(0 M)	manufacturer's instructions, Verify from vent
			3 3 ft		30 ft	manufacturer's instructions.
Add equiv length of factory concentric vent term	9	х	(0.9 M)	=	(9 M)	
			20 ft		40 ft	-
Add correction for flexible vent pipe, if any	2*	х	(6 1 M)	=	(12.2 M)	
* VERIEY FROM VENT MANUFACTURER'S IN	STRUC	TIONS' F	or example	only	assume 1 meter o	of flexible 60mm (2") or 80mm (3") polypropylene
	pipe ed	quals 2.0	) meters (6.	5 ft.) of	PVC/ABS pipe.	
			(		165 ft.	
Iotal Equivalent Vent Length (TEVL)					(50 M)	Add all of the above lines
				II	· · · · ·	
					95 ft.	For 2" pipe from Maximum Equivalent Vent
Maximum Equivalent vent Length (MEVL)					(29 M)	Length
In TEV// Jose then MEV// 2					NO	Therefore, 60mm (2") pipe may NOT be used;
IS TEVE less than MEVL?					NO	try 80mm (3")
						· · · ·
Maximum Equivalent Vent Length (MEV/L)					185 ft.	For 3" pipe from Maximum Equivalent Vent
					(57 M)	Length
Is TEVL less than MEVL?					YES	Therefore, 80mm (3") pipe MAY be used

#### **RETURN AIR TEMPERATURE**

This furnace is designed for continuous return-air minimum temperature of 60°F (15°C) db or intermittent operation down to 55°F (13°C) db such as when used with a night setback thermometer. Return-air temperature must not exceed 80°F (27°C) db. Failure to follow these return air limits may affect reliability of heat exchangers, motors and controls.



# COMBUSTION-AIR PIPE FOR NON-DIRECT (1-PIPE) VENT APPLICATION



NOTE: See Installation Instructions for specific venting configurations.

#### DOWNFLOW SUBBASE



**Downflow Subbase** 

A88202 One base fits all furnace sizes. The base is designed to be installed between the furnace and a combustible floor when no coil box is used or when a coil box other than the manufacturer's cased coil is used. It is CSA design certified for use with the manufacturer's branded furnaces when installed in downflow applications.

DIMENSIONS (IN. / MM)								
FURNACE		PLENUM OPENING <sup>*</sup>		FLOOR OPENING		HOLE NO. FOR		
CASING WIDTH	FURNACE IN DOWNFLOW APPLICATION	Α	в	С	D	WIDTH ADJUSTMENT		
14-3/16 (360)	Furnace with or without Cased Coil Assembly or Coil Box	11-3/16 (322)	19 (483)	13-7/16 (341)	20-5/8 (600)	4		
17-1/2 (445)	Furnace with or without Cased Coil Assembly or Coil Box	15-1/8 (384)	19 (483)	16-3/4 (426)	20-5/8 (600)	3		
21 (533)	Furnace with or without Cased Coil Assembly or Coil Box	18-5/8 (396)	19 (483)	20-1/4 (514)	20-5/8 (600)	2		
24-1/2 (622)	Furnace with or without Cased Coil Assembly or Coil Box	22-1/8 (562)	19 (483)	23-3/4 (603)	20-5/8 (600)	1		

\*. The plenum should be constructed 1/4-in. (6 mm) smaller in width and depth than the plenum dimensions shown above.



A concentric vent kit allows vent and combustion-air pipes to terminate through a single exit in a roof or side wall. One pipe runs inside the other allowing venting through the inner pipe and combustion air to be drawn in through the outer pipe.

#### **MEDIA FILTER CABINET (OPTIONAL** ACCESSORY)



NOTE: Media cabinet is matched to the bottom opening on furnace. May also be used for side return.

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**ACCESSORIES** 

DESCRIPTION	ACCESSORY PART NUMBER	36040C14	42060C17	42080C17	60080C21	66100C21	66120C24	
Condensate Neutralizer Kit	P908-0001 <sup>*</sup>	Х	Х	Х	Х	Х	Х	
Gas Valve Tower Port Adapter Kit	92-1003*	х	х	х	-	-	-	
External Filter Rack, 14-1/2" x 25"	ACG1425NCB*	Х	-	-	-	-	-	
External Filter Rack, 16" x 25"	ACG1625NCF*	-	Х	Х	-	-	-	
External Filter Rack, 20" x 25" <sup>*</sup>	ACG2025NCJ*	-	-	-	Х	Х	-	
External Filter Rack, 24-1/2" x 24"*	ACG2424NCL*	-	-	-	-	-	Х	
Washable filter, 3/4" x 16" x 25" <sup>*</sup>	325531-402*	Х	Х	х	-	-	-	
Washable filter, 3/4" x 20" x 25" <sup>*</sup>	325531-403*	-	-	-	Х	Х	-	
Washable filter, 3/4" x 24" x 25" <sup>*</sup>	325531-404*	-	-	-	-	-	Х	
Coil Adapter Kits - No Offset	KGADA0101ALL	Х	Х	Х	Х	Х	Х	
Coil Adapter Kits - Single Offset	KGADA0201ALL	Х	Х	Х	Х	Х	Х	
Coil Adapter Kits - Double Offset	KGADA0301ALL	Х	Х	Х	Х	Х	Х	
Return Air Base (Upflow Applications) 14-3/16" wide	KGARP0301B14	х	-	-	-	-	-	
Return Air Base (Upflow Applications) 17-1/2" wide	KGARP0301B17	-	х	х	-	-	-	
Return Air Base (Upflow Applications) 21" wide	KGARP0301B21	-	-	-	Х	Х	-	
Return Air Base (Upflow Applications) 24-1/2 wide	KGARP0301B24	-	-	-	-	-	х	
Vent Terminal - Concentric - 2" (51 mm)	KGAVT0701CVT	ICVT ICVT BRA See Venting Tables						
Vent Terminal - Concentric - 3" (76 mm)	KGAVT0801CVT							
Vent Terminal Bracket - 2" (51 mm)	KGAVT0101BRA							
Vent Terminal Bracket - 3" (76 mm)	KGAVT0201BRA	1						
Vent Kit - Through the Cabinet for HZ left/right ONLY	KGADC0101BVC	х	x	x	х	х	х	
Polypropylene Inlet Air Pipe Coupling	KGAAC0101RVC	Х	Х	Х	Х	Х	Х	
Freeze Protect Kit - Condensate Drain Line Tape	KGAHT0101CFP	х	х	х	х	х	х	
Freeze Protect Kit - Condensate Trap with Heat Pad	KGAHT0201CFP	х	х	х	х	х	х	
CPVC to PVC Drain Adapters - 1/2" CPVC to 3/4" PVC	KGAAD0110PVC	х	х	х	х	х	х	
External Trap Kit	KGAET0201ETK	Х	Х	Х	Х	Х	Х	
Horizontal Trap Grommet - Direct Vent	KGACK0101HCK			All 2-Pipe	Horizontal			
Downflow Furnace Base Kit for Combustible Floors	KGASB0201ALL	х	x	х	х	х	х	
IAQ Device Duct Adapters 20.0-in. IAQ to 16 in. Side Return	KGAAD0101MEC	20"x25" IAQ Devices						
IAQ Device Duct Adapters 24.0-in. IAQ to 16 in. Side Return	KGAAD0201MEC	24"x25" IAQ Devices						
Gas Conversion Kit - Nat to LP <sup>†</sup>	AGAGC9NPS01C*	Х	Х	Х	Х	Х	Х	
Gas Conversion Kit - LP to Nat <sup>†</sup>	AGAGC9PNS01C*	Х	Х	Х	Х	Х	Х	
Twinning Kit	AGATWNPME01B	Х	Х	Х	Х	Х	Х	
Evolution®; Evolution® Zoning	SYSTXBB	Х	Х	Х	Х	Х	Х	

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\*. Purchased through Replacement Components

Factory-authorized and field installed. Fuel conversion kits are CSA (formerly AGA/CGA) recognized.

†. Factory-au X = Accessory

#### ACCESSORIES (continued)

ION ACCESSORY PART NUMBER	
LH32DB207	
LH32DB202	
LH32DB200	
LH32DB205	
LH32DB208	
LH32DB078	See Installation Instructions for model,
LH32DB076	altitude, and heat value usages.
LH32DB203	
LH32DB201	
LH32DB206	
LH32DB209	
LH32DB210	

DESCRIPTION	ACCESSORY PART NUMBER
HUMIDIFIER	Model HUM
HEAT RECOVERY VENTILATOR	Model HRV
ENERGY RECOVERY VENTILATOR	Model ERV
UV LIGHTS	Model UVL

Bryant has a wide variety of thermostats for your system, please visit www.Bryant.com to see all thermostat and IAQ products.

DESCRIPTION	ACCESSORY PART NUMBER	14"	17"	21"	24"
Bryant Carbon Monoxide Alarm (10 pack)	COALMBBNRB02-A10	Х	Х	Х	Х
Bryant Evolution Air Purifier - 16x25 (407x635 mm)	DGAPAXX1625	Х	Х	-	-
Bryant Evolution Air Purifier - 20x25 (508x635 mm)	DGAPAXX2025	-	-	Х	Х
Bryant Evolution Air Purifier Repl. Filter- 16x25 (407x635 mm)	PGAPXCAR1625A02	Х	Х	-	-
Bryant Evolution Air Purifier Repl. Filter- 20x25 (508x635 mm)	PGAPXCAR2025A02	-	-	Х	Х
Cartridge Media Filter - 16" (407 mm) (MERV 11)	FILXXCAR0116	Х	Х	-	-
Cartridge Media Filter - 16" (407 mm) (MERV 8)	FILXXCAR0016	Х	Х	-	-
Cartridge Media Filter - 20" (508 mm) (MERV 8)	FILXXCAR0020	-	-	Х	-
Cartridge Media Filter - 20" (508 mm) (MERV11)	FILXXCAR0120	-	-	Х	-
Cartridge Media Filter - 24" (610 mm) (MERV 8)	FILXXCAR0024	-	-	-	Х
Cartridge Media Filter - 24" (610 mm) (MERV11)	FILXXCAR0124	-	-	-	Х
EZ Flex Cabinet Side or Bottom - 16"	EZXCAB0016	Х	Х	-	-
EZ Flex Cabinet Side or Bottom - 20"	EZXCAB0020	-	-	Х	Х
EZ Flex Replacement Filters 16" MERV 10	EXPXXFIL0016	Х	Х	-	-
EZ Flex Replacement Filters 16" MERV 13	EXPXXFIL0316	Х	Х	-	-
EZ Flex Replacement Filters 20" MERV 10	EXPXXFIL0020	-	-	Х	-
EZ Flex Replacement Filters 20" MERV 13	EXPXXFIL0320	-	-	Х	-
EZ Flex Replacement Filters 24" MERV 10	EXPXXFIL0024	-	-	-	Х
EZ Flex Replacement Filters 24" MERV 13	EXPXXFIL0324	-	-	-	Х
EZ-Flex Filter with End Caps - 16" (407 mm) (MERV 10)	EXPXXUNV0016	Х	Х	-	-
EZ-Flex Filter with End Caps - 16" (407 mm) (MERV 13)	EXPXXUNV0316	Х	Х	-	-
EZ-Flex Filter with End Caps - 20" (508 mm) (MERV 10)	EXPXXUNV0020	-	-	Х	-
EZ-Flex Filter with End Caps - 20" (508 mm) (MERV 13)	EXPXXUNV0320	-	-	Х	-
EZ-Flex Filter with End Caps - 24" (610 mm) (MERV 10)	EXPXXUNV0024	-	-	-	Х
EZ-Flex Filter with End Caps - 24" (610 mm) (MERV 13)	EXPXXUNV0324	-	-	-	Х
Media Filter Cabinet - 20"	FILCABXL0020	-	-	Х	-
Media Filter Cabinet - 24"	FILCABXL0024	-	-	-	Х
Media Filter Cabinet - 16"	FILCABXL0016	Х	Х	-	-

986TD: Product Data

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